The Environment (Protection) Rules, 1986

UNION OF INDIA
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The Environment (Protection) Rules, 1986

Rule THE-ENVIRONMENT-PROTECTION-RULES-1986 of 1986

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The Environment (Protection) Rules, 1986Published vide S.O. 844(E), dated 19.11.1986, published in the Gazette of India, Ext., Part 2., Section 3(i), dated 19.11.1986Last Updated 8th January, 2019 [10/528]In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules, namely:-

1. Short title and commencement. - (i) These rules may be called The Environment (Protection) Rules, 1986.

(ii)They shall come into force on the date of their publication in the Official Gazette.

2. Definitions. - In these rules, unless the context otherwise requires,-

(a)"Act" means the Environment (Protection) Act, 1986 (29 of 1986);(aa)["areas" means all areas where the hazardous substances are handled;](b)"Central Board" means the Central Board for the Prevention and Control of Water Pollution constituted under section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);(c)"Form" means a Form set forth in Appendix A to these rules;(d)"Government Analyst" means a person appointed or recognised as such under section 13;(e)"person" in relation to any factory or premises means a person or occupier or his agent who has control over the affairs of the factory or premises and includes in relation to any substance, the person in possession of the substance;(ee)["prohibited substance" means the substance prohibited for handling;] [Inserted by G.S.R. 931(E), dated 27.10.1989 (w.e.f. 27.10.1989).](f)"recipient system" means the part of the environment, such as soil, water, air or other which receives the pollutants;(ff)["restricted substance" means the substance restricted for handling;] [Inserted by G.S.R. 931(E), dated 27.10.1989 (w.e.f. 27.10.1989).](g)"section" means a section of the Act;(h)"Schedule" means a Schedule appended to these rules;(i)"standards" means standards prescribed under these rules;(j)"State Board" means a State Board for the Prevention and Control of Water Pollution constituted under section 4 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974), or a State Board for the Prevention and Control of Air Pollution constituted under

section 5 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981).

3. Standards for emission or discharge of environmental pollutants. - (1) For the purposes of protecting and improving the quality of the environment and preventing and abating environmental pollution, the standards for emission or discharge of environmental pollutants from the industries, operations or processes shall be as specified in [Schedules I to IV].

[* * *] [Proviso omitted by S.O. 23(E), dated 16.1.1991 (w.e.f. 16.1.1991).](2)Notwithstanding anything contained in sub-rule (1), the Central Board or a State Board may specify more stringent standards from those provided in [Schedules I to IV] [Substituted by G.S.R. 422(E), dated 19.5.1993 (w.e.f. 19.5.1993).] in respect of any specific industry, operation or process depending upon the quality of the recipient system and after recording reasons, therefor, in writing.(3)[The standards for emission or discharge of environmental pollutants specified under sub-rule (1) or sub-rule (2) shall be complied with by an industry, operation or process within a period of one year of being so specified.[(3-A)(i) Notwithstanding anything contained in sub-rules (1) and (2), on and from the 1st day of January, 1994, emission or discharge of environmental pollutants from the [industries, operations or processes other than those industries, operations or processes for which standards have been specified in Schedule I shall] [Inserted omitted by S.O. 23(E), dated 16.1.1991 (w.e.f. 16.1.1991).][not exceed the relevant parameters and standards specified in Schedule VI:Provided that the State Boards may specify more stringent standards for the relevant parameters with respect to specific industry or locations after recording reasons therefor in writing;(ii)The State Board shall while enforcing the standards specified in Schedule VI follow the guidelines specified in Annexures I and II in that Schedule.][(3-B) The combined effect of emission or discharge of environmental pollutants in an area, from industries, operations, processes, automobiles and domestic sources, shall not be permitted to exceed the relevant concentration in ambient air as specified against each pollutant in columns (3) to (5) of Schedule VII.] [Substituted by G.S.R. 7, dated 22.12.1998 (w.e.f. 2.1.1999). Earlier it was inserted by G.S.R. 176(E), dated 2.4.1996 (w.e.f. 3.4.1996).](4)[Notwithstanding anything contained in sub-rule (3),-(a)the Central Board or a State Board, depending on the local conditions or nature of discharge of environment pollutants, may, by order, specify a lesser period than a period specified under sub-rule (3) within which the compliance of standards shall be made by an industry, operation or process;(b)the Central Government in respect of any specific industry, operation or process, by order, may specify any period other than a period specified under sub-rule (3) within which the compliance of standards shall be made by such industry, operation or process.(5)Notwithstanding anything contained in sub-rule (3), the standards for emission or discharge of environmental pollutants specified under sub-rule (1) or sub-rule (2) in respect of an industry, operation or process before the commencement of the Environment (Protection) Amendment Rules, 1991, shall be complied with by such industry, operation or process by the 31st day of December, 1991.] [Inserted omitted by S.O. 23(E), dated 16.1.1991 (w.e.f. 16.1.1991).] [Inserted by G.S.R. 422(E), dated 19.5.1993 (w.e.f. 19.5.1993).](6)[Notwithstanding anything contained in sub-rule (3), an industry, operation or process which has commenced production on or before 16th May, 1981 and has shown adequate proof of at least commencement of physical work for establishment of facilities to meet the specified standards within a time-bound

programme, to the satisfaction of the concerned State Pollution Control Board, shall comply with such standards latest by the 31st day of December, 1993.(7)Notwithstanding anything contained in sub-rule (3) or sub-rule (6) an industry, operation or process which has commenced production after the 16th day of May, 1991 but before the 31st day of December, 1991 and has shown adequate proof of at least commencement of physical work for establishment of facilities to meet the specified standards within a time-bound programme, to the satisfaction of the concerned State Pollution Control Board, shall comply with such standards latest by the 31st day of December, 1992.] [Added by G.S.R. 95(E), dated 12.2.1992 (w.e.f. 12.2.1992).](8)[With effect from the date specified hereunder, the following coal based thermal power plants shall be supplied with, and shall use, raw or blended or beneficiated coal with ash content not exceeding thirty-four per cent, on quarterly average basis, namely :-] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](a)a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located beyond 1000 kilometres from the pit-head or, in an urban area or an ecologically sensitive area or a critically polluted industrial area, irrespective of its distance from the pit-head, except a pit-head power plant, with immediate effect] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](b)a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located between 750 - 1000 kilometres from the, 2015;, pit-head, with effect from the 1st day of January] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](c)a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located between 500-749 kilometres from the pit-head, with effect from the 5th day of June, 2016:Provided that in respect of a thermal power plant using Circulating Fluidised Bed Combustion or Atmosphere Fluidised Bed Combustion or Pressurized Fluidised Bed Combustion or Integrated Gasification Combined Cycle technologies or any other clean technologies as may be notified by the Central Government in the Official Gazette, the provisions of clauses (a), (b) and (c) shall not be applicable] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014]Explanation : For the purpose of this rule] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](i)'beneficiated coal' means coal containing higher calorific value but lower ash than the original ash content in the raw coal obtained through physical separation or washing process] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](ii)'captive thermal power plant' means a power plant which is set up by an industry to generate electricity for its exclusive use] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](iii)'critically polluted industrial area' means an industrial cluster or area where pollution levels have reached or likely to reach critical level, and has been identified as such by the Central Government or the State Government or the Central Pollution Control Board or a State Pollution Control Board] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](iv)'ecologically sensitive area' means an area whose ecological balance is prone to be easily disturbed and has been identified and notified by the Central Government] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](v)'installed capacity' shall be calculated by adding, individual capacity of all units within a boundary] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](vi)'pit-head power plant' means any captive or stand-alone power station having captive transportation system for its exclusive use for transportation of coal from the loading point at the mining end, up to the uploading point at the power station without using the normal public transportation system] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](vii)'stand-alone thermal power plant' means a power plant which is set up to generate electricity for feeding to electricity grid or for

locations that are nor fitted with an electricity distribution system; and] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014](viii)'urban area' means an area limit of a city having a population of more than one million according to the last census.] [Substituted by Notification No. G.S.R. 02 (E) dated 2.1.2014]

4. Directions. - (1) Any direction issued under section 5 shall be in writing.

(2)The direction shall specify the nature of action to be taken and the time within which it shall be complied with by the person, officer or the authority to whom such direction is given.[(3-a)] The person, officer or authority to whom any direction is sought to be issued shall be served with a copy of the proposed direction and shall be given an opportunity of not less than fifteen days from the date of service of a notice to file with an officer designated in this behalf the objections, if any, to the issue of the proposed direction.[(3-b) Where the proposed direction is for the stoppage or regulation of electricity or water or any other service affecting the carrying on any industry, operation or process and is sought to be issued to an officer or an authority, a copy of the proposed direction shall also be endorsed to the occupier of the industry, operation or process, as the case may be, and objections, if any, filed by the occupier with an officer designated in this behalf shall be dealt with in accordance with the procedures under sub-rules (3- a) and (4) of this rule:Provided that no opportunity of being heard shall be given to the occupier if he had already been heard earlier and the proposed direction referred to in sub-rule (3- b) above for the stoppage or regulation of electricity or water or any other service was the resultant decision of the Central Government after such earlier hearing.] [Inserted by S.O. 64(E), dated 18.1.1988 (w.e.f. 18.1.1988).](4)The Central Government shall within a period of 45 days from the date of receipt of the objections, if any, or from the date up to which an opportunity is given to the person, officer or authority to file objections whichever is earlier, after considering the objections, if any, received from the person, officer or authority sought to be directed and for reasons to be recorded in writing, confirm, modify or decide not to issue the proposed direction.(5)In a case where the Central Government is of the opinion that in view of the likelihood of a grave injury to the environment it is not expedient to provide an opportunity to file objections against the proposed direction, it may, for reasons to be recorded in writing, issue directions without providing such an opportunity.(6)Every notice or direction required to be issued under this rule shall be deemed to be duly served-(a)where the person to be served is a company, if the document is addressed in the name of the company at its registered office or at its principal office or place of business and is either,-(i)sent by registered post, or(ii)delivered at its registered office or at the principal office or place of business;(b)where the person to be served is an officer serving Government, if the document is addressed to the person and a copy thereof is endorsed to the Head of the Department and also to the Secretary to the Government, as the case may be, incharge of the Department in which for the time being the business relating to the Department in which the officer is employed is transacted and is either,-(i)sent by registered post, or(ii)is given or tendered to him;(c)in any other case, if the document is addressed to the person to be served and-(i)is given or tendered to him; or(ii)if such person cannot be found, is affixed on some conspicuous part of his last known place of residence or business or is given or tendered to some adult member of his family or is affixed on some conspicuous part of the land or building, if any, to which it relates; or(iii)is sent by registered post to that person.Explanation. - For the purposes of this sub-rule,-(a)"company" means any body corporate and includes a firm or other association of

individuals;(b)"a servant" is not a member of the family.

5. Prohibition and restriction on the location of industries and the carrying on processes and operations in different areas. - (1) The Central Government may take into consideration the following factors while prohibiting or restricting the location of industries and carrying on of processes and operations in different areas:-

(i)Standards for quality of environment in its various aspects laid down for an area.(ii)The maximum allowable limits of concentration of various environmental pollutants (including noise) for an area.(iii)The likely emission or discharge of environmental pollutants from an industry, process or operation proposed to be prohibited or restricted.(iv)The topographic and climatic features of an area.(v)The biological diversity of the area which, in the opinion of the Central Government, needs to be preserved.(vi)Environmentally compatible land use.(vii)Net adverse environmental impact likely to be caused by an industry, process or operation proposed to be prohibited or restricted.(viii)Proximity to a protected area under the Ancient Monuments and Archaeological Sites and Remains Act, 1958 or a sanctuary, National Park, game reserve or closed area notified, as such under the Wild Life (Protection) Act, 1972, or places protected under any treaty, agreement or convention with any other country or countries or in pursuance of any decision made in any international conference, association or other body.(ix)Proximity to human settlements.(x)Any other factor as may be considered by the Central Government to be relevant to the protection of the environment in an area.(2)While prohibiting or restricting the location of industries and carrying on of processes and operations in an area, the Central Government shall follow the procedure hereinafter laid down.(3)(a)Whenever it appears to the Central Government that it is expedient to impose prohibition or restrictions on the location of an industry or the carrying on of processes and operations in an area, it may, by notification in the Official Gazette and in such other manner as the Central Government may deem necessary from time to time, give notice of its intention to do so.(b)Every notification under clause (a) shall give a brief description of the area, the industries, operations, processes in that area about which such notification pertains and also specify the reasons for the imposition of prohibition or restrictions on the location of the industries and carrying on of processes or operations in that area.(c)Any person interested in filing an objection against the imposition of prohibition or restriction on carrying on of processes or operations as notified under clause (a) may do so in writing to the Central Government within sixty days from the date of publication of the notification in the Official Gazette.(d)The Central Government shall, within a period of one hundred and twenty days from the date of publication of the notification in the Official Gazette, consider all the objections received against such notification and may [within [five hundred and forty five days][, and in respect of the States of Assam, Meghalaya, Arunachal Pradesh, Mizoram, Manipur, Nagaland, Tripura, Sikkim and Jammu and Kashmir in exceptional circumstance and for sufficient reasons within a further period of one hundred and eighty days] [Inserted by Notification No. S.O. 2537(E), dated 8.8.2017, (w.e.f. 19.11.1986).][from such date of publication,] [Inserted by G.S.R. 562(E), dated 27.5.1992.] impose prohibition or restrictions on location of such industries and the carrying on of any process or operation in an area.(4)[Notwithstanding anything contained in sub-rule (3), whenever it appears

to the Central Government that it is in public interest to do so, it may dispense with the requirement of notice under clause (a) of sub-rule (3).] [Inserted by G.S.R. 320(E), dated 16.3.1994 (w.e.f. 16.3.1994).]

6. [Procedure for taking samples.

- The Central Government or the officer empowered to take samples under section 11 shall collect the sample in sufficient quantity to be divided into two uniform parts and effectively seal and suitably mark the same and permit the person from whom the sample is taken to add his own seal or mark to all or any of the portions so sealed and marked. In case where the sample is made up in containers or small volumes and is likely to deteriorate or be otherwise damaged if exposed, the Central Government or the officer empowered shall take two of the said samples without opening the containers and suitably seal and mark the same. The Central Government or the officer empowered shall dispose of the samples so collected as follows:-(i)one portion shall be handed over to the person from whom the sample is taken under acknowledgment; and(ii)the other portion shall be sent forthwith to the environmental laboratory for analysis.]

7. Service of notice. - The Central Government or the officer empowered shall serve on the occupier or his agent or person in charge of the place a notice then and there in Form I of his intention to have the sample analysed.

8. Procedure for submission of samples for analysis, and the form of laboratory report thereon. - (1) Sample taken for analysis shall be sent by the Central Government or the officer empowered to the environmental laboratory by registered post or through special messenger alongwith Form II.

(2)Another copy of Form II, together with specimen impression of seals of the officer empowered to take samples alongwith the seals/marks, if any, of the person from whom the sample is taken shall be sent separately in a sealed cover by registered post or through a special messenger to the environmental laboratory.(3)The findings shall be recorded in Form III in triplicate and signed by the Government Analyst and sent to the officer from whom the sample is received for analysis.(4)On receipt of the report of the findings of the Government Analyst, the officer shall send one copy of the report to the person from whom the sample was taken for analysis, the second copy shall be retained by him for his records and the third copy shall be kept by him to be produced in the Court before which proceedings, if any, are instituted.

9. Functions of environmental laboratories. - The following shall be the functions of environmental laboratories:-

(i)to evolve standardised methods for sampling and analysis of various types of environmental pollutants;(ii)to analyse samples sent by the Central Government or the officers empowered under

sub-section (1) of section 11;(iii)to carry out such investigations as may be directed by the Central Government to lay down standards for the quality of environment and discharge of environmental pollutants, to monitor and to enforce the standards laid down;(iv)to send periodical reports regarding its activities to the Central Government;(v)to carry out such other functions as may be entrusted to it by the Central Government from time to time.

10. Qualifications of Government Analyst. - A person shall not be qualified for appointment or recognised as a Government Analyst unless he is a -

(a)graduate in science from a recognised university with five years' experience in a laboratory engaged in environmental investigations, testing or analysis; or(b)post-graduate in science or a graduate in engineering or a graduate in medicine or equivalent with two years' experience in a laboratory engaged in environmental investigations, testing or analysis; or(c)post-graduate in environmental science from a recognised university with two years' experience in a laboratory engaged in environmental investigations, testing or analysis.

11. Manner of giving notice. - The manner of giving notice under clause (b) of section 19 shall be as follows, namely:-

(1)The notice shall be in writing in Form IV;(2)The person giving notice may send notice to,-(a)if the alleged offence has taken place in a Union territory:-(A)the Central Board; and(B)the Ministry of Environment and Forests (represented by the Secretary of the Government of India);(b)if the alleged offence has taken place in a State:-(A)the State Board; and(B)the Government of the State (represented by the Secretary to the State Government incharge of environment); and(C)the Ministry of Environment and Forests (represented by the Secretary to the Government of India);(3)The notice shall be sent by registered post-acknowledgment due; and(4)The period of sixty days mentioned in clause (b) of section 19 of the Environment (Protection) Act, 1986 (29 of 1986) shall be reckoned from the date it is first received by one of the authorities mentioned above.

12. [Furnishing of information to authorities and agencies in certain cases.

- Where the discharge of environmental pollutant in excess of the prescribed standard occurs or is apprehended to occur due to any accident or other unforeseen act or event, the person in charge of the place at which such discharge occurs or is apprehended to occur shall forthwith intimate the fact of such occurrence or apprehension of such occurrence to all the following authorities or agencies, namely:-(i)The officer-in-charge of emergency or disaster relief operations in a district or other region of a State or Union territory specified by whatever designation, by the Government of the said State or Union territory, and in whose jurisdiction the industry, process or operation is located.(ii)The Central Board or a State Board, as the case may be, and its regional officer having local jurisdiction who have been delegated powers under sections 20, 21, 23 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and section 24 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981).(iii)The statutory authorities or agencies specified in column 3 in relation to places mentioned in column 2 against thereof of [Schedule V].]

13. [Prohibition and restriction on the handling of hazardous substances in different areas.

(1)The Central Government may take into consideration the following factors while prohibiting or restricting the handling of hazardous substances in different areas:-(i)the hazardous nature of the substance (either in qualitative or quantitative terms) as far as may be in terms of its damage causing potential to the environment, human beings, other living creatures, plants and property;(ii)the substances that may be or likely to be readily available as substitutes for the substances proposed to be prohibited or restricted;(iii)the indigenous availability of the substitute, or the state of technology available in the country for developing a safe substitute;(iv)the gestation period that may be necessary for gradual introduction of a new substitute with a view to bringing about a total prohibition of the hazardous substance in question; and(v)any other factor as may be considered by the Central Government to be relevant to the protection of environment.(2)While prohibiting or restricting the handling of hazardous substances in an area including their imports and exports the Central Government shall follow the procedure hereinafter laid down:-(i)Whenever it appears to the Central Government that it is expedient to impose prohibition or restriction on the handling of hazardous substances in an area, it may, by notification in the Official Gazette and in such other manner as the Central Government may deem necessary from time to time, give notice of its intention to do so.(ii)Every notification under clause (i) shall give a brief description of the hazardous substances and the geographical region or the area to which such notification pertains and also specify the reasons for the imposition of prohibition or restriction on the handling of such hazardous substances in that region or area.(iii)Any person interested in filing an objection against the imposition of prohibition or restrictions on the handling of hazardous substances as notified under clause (i) may do so in writing to the Central Government within thirty days from the date of publication of the notification in the Official Gazette.(iv)The Central Government shall within a period of sixty days from the date of publication of the notification in the Official Gazette consider all the objections received against such notification and may impose prohibition or restrictions on the handling of hazardous substances in a region or an area.]

14. [Submission of environment statement.

- Every person carrying on an industry, operation or process requiring consent under section 25 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or under section 21 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) or both or authorisation under the Hazardous Wastes (Management and Handling) Rules, 1989 issued under the Environment (Protection) Act, 1986 (29 of 1986) shall submit an environmental [statement] [for the financial year ending on the 31st March in Form V to the concerned State Pollution Control Board on or before the [thirtieth day of September] [Inserted by G.S.R. 329(E), dated 13.10.1992 (w.e.f. 13.3.1992).][every year, beginning 1993.] [Inserted by G.S.R. 329(E), dated 13.10.1992 (w.e.f. 13.3.1992).]

[I] [Schedule renumbered as Schedule I by S.O. 82(E), dated 16-2-1987 (w.e.f. 16-2-1987).]

(See rule 3)

Sl. No.	Industry	Parameter	Standards
1	2	3	4
1.	Caustic soda industry		Concentration not to exceed, milligramme per litre (except for pH and flow)
		Total concentration of mercury in the final effluent*	0.01
		Mercury bearing waste-water generation (flow)	10 kilolitres/tonne of caustic soda produced
		pH	5.5- 9.0
		*Final effluent is the combined effluent from (a) cell house, (b) brine plant, (c) chlorine handling, (d)hydrogen handling, (e) hydrochloric acid plant	
2.	Man-made fibres(synthetic)		Concentration not to exceed, milligramme per litre (except for pH)
		Suspended solids	100
		[BOD (3 days at 27 [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).][°]C)]	30
	Petroleum Oil refinery	pH	5.5-9.0
3. [] [Substituted by G.S.R. 186(E), dated 18-3-2008 (w.e.f. 18-3-2008).]		[A.Effluent] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	
		[Limiting value for concentration (mg/I except for pH)] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	

1. [pH] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	6. [0-8.5] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
2. [Oil & Grease] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	5. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
3. [BOD3days, 27°C] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	15. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
4. [COD] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	125. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
5. [Suspended Solids] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	20. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
6. [Phenols] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [35] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
7. [Sulphide] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [5] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
8. [CN] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [20] [Substituted by Notification No.

	G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
9. [Ammonia as N] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	15. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
10. [TKN] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	40. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
11. [P] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	3. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
12. [Cr (Hexavalent)] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [1] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
13. [Cr (Total)] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	2. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
14. [Pb] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [1] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
15. [Hg] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [01] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
16. [Zn] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f.	5. [0] [Substituted by Notification

19.11.1986)]	No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
17. [Ni] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	1. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
18. [Cu] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	1. [0] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
19. [V] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [2] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
20. [Benzene] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [1] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
21. [Benzo(a)-Pyrene] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	0. [2] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]
[Notes. -] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]	
(i) [Concentration limits shall be complied with at the outlet, discharging effluent (excluding discharge from sea water cooling systems) to receiving environment (surface water bodies, marine systems or public sewers). In case of application of treated effluent directly for irrigation/horticulture purposes (within or outside the premises of refinery), make-up water for cooling systems, fire fighting, etc., the concentration limits shall also be complied with at the outlet before taking the effluent for such	

application.However, any use in the process such as use of sour water in desolater is excluded for the purpose of compliance.] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]

(ii) [In case of circulating seawater cooling, the blow-down from cooling systems shall be monitored for pH and oil& grease (also hexavalent & total chromium, if chromate treatment is given to cooling water) and shall conform to the concentration limits for these parameters. In case of reuse of treated effluent as cooling water make-up, all the parameters (as applicable for treated effluent) shall be monitored and conform to the prescribed standards.] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]

(iii) [In case of once through cooling with seawater, the oil & grease content in the effluent from cooling water shall not exceed 1.0 mg/1] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]

[B. Emissions

		Limiting concentration in mg/Nm, unless stated		
		Fuel Type	Existing refineries	New Refinery/Furnace/Boiler
(Furnace, Boiler and captive Power Plant)	SulphurDioxide (SO2)	Gas	50	50
		Liquid	1700	850
	Oxides of Nitrogen (NOx)	Gas	350	250
		Liquid	450	350
	Particulate Matter (PM)	Gas	10	5
		Liquid	100	50
	Carbon Monoxide (CO)	Gas	150	100
		Liquid	200	150
	Nickel and Vanadium	Liquid	5	5

(Ni+V)			
Hydrogen Sulphide(H2S) in fuel gas	Liquid/gas	150	150
Sulphurcontent in liquid fuel, weight %	Liquid/gas	1.0	0.5

Notes. -

(i) In case of mixed fuel (gas and liquid) use, the limit shall be computed based on heat supplied by gas and liquid fuels.

(ii) All the furnaces/boilers with heat input of 10 million kilo calories/hour or more shall have continuous systems for monitoring of SO2, and NOx. Manual monitoring for all the emission parameters in such furnaces or boilers shall be carried out once in two months.

(iii) All the emission parameters in furnaces/boilers having heat input less than 10million kilo calories/hour will be monitored once in three months.

(iv) In case of continuous monitoring, one hourly average concentration values shall be complied with 98% of the time in a month. Any concentration value obtained through manual monitoring, if exceeds the limiting concentration value, shall be considered as non-compliance.

(v) Data on Nickel and Vanadium content in the

liquid fuel (in ppm)shall be reported. Nickel and Vanadium in the liquid fuel shall be monitored at least once in six months, if liquid fuel source quality are not changed. In case of changes, measurement is necessary after every change.

(FCC Regenerators)	Limiting concentration in mg/Nm^3, unless stated		
	Existing refineries hydro-processed FCC feed	Other than hydro-processed FCC feed	New Refinery/FCC Commissioned
SulphurDioxide (SO_2)	500	1700	500(for hydro-processed feed) 850 (for other feed)
Oxides of Nitrogen (NOx)	400	450	350
Particulate Matter (PM)	100	100	50
Carbon Monoxide (CO)	400	400	300
Nickel and Vanadium(Ni+V)	2	5	2
Opacity, %	30	30	30

Notes. -

(i) In case part feed is hydro-processed, the emission values shall be calculated proportional to the feed rates of untreated and treated feeds.

(ii) FCC regenerators shall have continuous systems for monitoring of SO_2 and NOx. One hourly average concentration values shall be complied with 98% of the time in a month, in case of continuous monitoring. Manual monitoring for all the emission parameters shall be carried out once in two months.

(iii) Any concentration value obtained through manual monitoring, if exceeds

the limiting concentration value, shall he considered as non-compliance.

(iv) Data onSulphur(weight in %), Nickel (PPM) and Vanadium (PPM) content in the feed to FCC shall be reported regularly.

(v) Limit of Carbon Monoxide emissions shall be complied with except during annual shut down of CO boiler for statutory maintenance.

		Plant capacity (Tonnes/day)	Existing SRU	New SRU or Refinery Commissioned
[Sulphur recovery Units (SRU)]	Sulphurrecovery, %	Above 20	98.7	99.5
	H_2S mg/Nm3,		15	10
	Sulphurrecovery, %	5-20	96	98
	Sulphurrecovery, %	1-5	94	96
	Oxides of Nitrogen NOx), mg/Nm3	Allcapacity	350	250
	Carbon Monoxide (CO), mg/Nm3	All capacity	150	100
	Notes. -			
	(i)Sulphurrecovery units having capacity above 20 tonnes per day shall have continuous systems for monitoring of SO_2. Manual monitoring for all the emission parameters shall be carried out once in a month.			
	(ii) Data on Sulphur Dioxide emissions (mg/Nm3) shall he reported regularly.			
	(iii)Sulphurrecovery efficiency shall be calculated on monthly basis, using quantity of sulphur in the feed to SRU and quantity of sulphur recovered.			

C. Fugitive EmissionStorage of Volatile Liquids: General Petroleum Products(1)Storage tanks with capacity between 4 to 75m3 and Total Vapour Pressure (TVP) of more than 10 kpa should have Fixed Roof Tank (FRT) with pressure valve vent.(2)Storage tanks with the capacity between 75 to 500 m^3 and Total Vapour Pressure (TVP) of 10 to 76 kpa should have Internal Floating Roof Tank (IFRT) or External Floating Roof Tank (EFRT) or Fixed Roof Tank with vapour control or vapour

balancing system.(3)Storage tanks with the capacity of more than 500 m³ and Total Vapour Pressure (TVP) of 10 to 76 kpa should have Internal Floating Roof Tank or External Floating Roof Tank or Fixed Roof Tank with vapour control system.(4)The tanks with the capacity of more than 75 m³ and Total Vapour Pressure (TVP) of more than 76 kpa should have Fixed Roof Tank with vapour control system.(5)Requirement for seals in Floating Roof Tanks:(i)(a)IFRT and EFRT shall be provided with double seals with minimum vapour recovery of 96%.(b)Primary seal shall be liquid or shoe mounted for EFRT and vapour mounted for IFRT. Maximum seal gap width will be 4 cm and maximum gap area will be 200 cm²/m of tank diameter.(c)Secondary seal shall be rim mounted. Maximum seal gap width will be 1.3 cm and maximum gap area will be 20 cm²/m of tank diameter.(d)Material of seal and construction shall ensure high performance and durability.(ii)Fixed Roof Tanks shall have vapour control efficiency of 95% and vapour balancing efficiency of 90%.(iii)Inspection and maintenance of storage tanks shall be carried out under strict control. For the inspection, API RP 575 may be adopted. In-service inspection with regard seal gap should be carried out once in every six months and repair to be implemented in short time. In future, possibility of on-stream repair of both seals shall be examined.Storage of Volatile Liquids: Benzene Storage(1)FRT with vapour to incineration with 99.9% of removal efficiency for Volatile Organic Compounds (VOC) shall be provided.(2)IFRT/EFRT with double seals, emission-reducing roof fitting and fitted with fixed roof with vapour removal efficiency of at least 99% shall be provided.Solvents for Lube-Base Oil production (Furfural, NMP, MEK, Toluene and MIBK)IFRT with double seals and inert gas blanketing with vapour removal efficiency of at least 97% shall be provided.

1	2	3	4
Emission control for Road Tank Truck/Rail Tank Wagon Loading			
Loading of Volatile Products	Gasoline and Naphtha:		
(i) VOC reduction, %	(i)	99.5	
(ii) Emission, gm/m3	(ii)	5	
Benzene:			
(i) VOC reduction, %	(i)	99.99	
(ii) Emission, mg/m3	(ii)	20	
Toluee/Xylene:			
(i) VOC reduction, %	(i)	99.98	
(ii) Emission, mg/m3	(ii)	150	
	Note. -		
	(i) It shall be applicable for Gasoline, Naphtha, Benzene, Toluene and Xylene loading.		
	(ii) Road Tank Truck shall have Bottom loading and Rail Tank Wagon shall have Top submerged loading.		
	(iii) Annual leak testing for vapour collection shall be done.		

Standards for Equipment Leaks(1)Approach: Approach for controlling fugitive emissions from

equipment leaks shall have proper selection, installation and maintenance of non-leaking or leak-tight equipment. Following initial testing after commissioning, the monitoring for leak detection is to be carried out as a permanent on-going Leak Detection and Repair (LDAR) programme. Finally detected leaks are to be repaired within allowable time frame.(2)Components to be Covered: Components that shall be covered under LDAR programme include (i) Block valves; (ii) Control valves; (iii) Pump seals; (iv) Compressor seals; (v) Pressure relief valves; (vi) Flanges-Heat Exchangers; (vii) Flanges-Piping; (viii) Connectors-Piping; (ix) Open ended lines; and (x) Sampling connections. Equipment and line sizes more than 1.875 cm or ¾ inch are to be covered.(3)Applicability: LDAR programme would he applicable to components (given at 2 above) for following products/compounds: (i) hydrocarbon gases; (ii) Light liquid with vapour pressure @ 20°C 1.0 kPa; and (iii) Heavy liquid with vapour pressure @ 20°C between 0.3 to 1.0 kPa.(4)While LDAR will not he applicable for heavy liquids with vapour pressure 0.3 kPa, it will be desirable to check for liquid dripping as indication of leak.(5)Definition of leek: A leak is defined as the detection of VOC concentration more than the values (in ppm) specified below at the emission source using a hydrocarbon analyzer according to measurement protocol (US EPA-453/R-95-017, 1995). Protocol for equipment leak emission estimates may be referred to :

Component	General Hydrocarbon (ppm)	Benzene (ppm)		
	Till 31st Dec., 2008	w.e.f. January 01, 2009	Till 31st Dec., 2008	w.e.f. January01, 2009
Pump/Compressor	10000	5000	3000	2000
Valves/Flanges	10000	3000	2000	1000
sOther components	10000	3000	2000	1000

(6)In addition, any component observed to be leaking by sight, sound or smell, regardless of concentration (liquid dripping, visible vapor leak) or presence of bubbles using soap solution should be considered as leak.

(7)Monitoring Requirements and Repair Schedule:Following frequency of monitoring of leaks and schedule for repair of leaks shall be followed:

Component	Frequency of monitoring	Repair schedule
	Quarterly(semiannual after two consecutive periods with 2% leaks and annual after 5 periods with 2% leaks)	Repair will be started within 5 working days and shall be completed within 15 working days after detection of leak for general hydrocarbons. In case of benzene, the leak shall be attended immediately for repair.
Pump seals	Quarterly	
Compressor seals	Quarterly	

Pressure relief devices	Quarterly	
Pressure relief devices (after venting)	Within 24 hours	
Heat Exchangers	Quarterly	
Process drains	Annually	
Components that are difficult to monitor	Annually	
Pump seals with visible liquid dripping	Immediately	Immediately
Any component with visible leaks	Immediately	Immediately
Any component after repair/replacement	Within five days	

(8)The percentage leaking components should not be more than 2% for any group of components, monitored excluding pumps/compressors. In case of pumps/compressors, it should be less than 10% of the total number of pumps/compressors or three pumps and compressors, whichever is greater.(9)Emission Inventory: Refinery shall prepare an inventory of equipment components in the plant. After the instrumental measurement of leaks, emission from the components will be calculated using stratified emission factors (USEPA) or any other superior factors. The total fugitive emission will be established.(10)Monitoring: Following types of monitoring methods may be judiciously employed for detection of leaks: (i) Instrumental method of measurement of leaks; (ii) Audio, Visual and Olfactory (AVO) leak detection; and (iii) Soap bubble method.(11)Data on time of measurement and concentration value for leak detection; time of repair of leak; and time of measurement concentration value after repair of leak should be documented for all the components.(12)Pressure relief and blow down systems should discharge to a vapour collection and recovery system or to flare.(13)Open-ended lines should be closed by a blind flange or plugged.(14)Totally closed-loop should be used in all routine samples.(15)Low emission packing should be used for valves.(16)High integrity sealing materials should be used for flanges.D. Emission Standards for VOC from Wastewater Collection and Treatment(1)All contaminated and odorous wastewater streams shall be handled in closed systems from the source to the primary treatment stages (oil-water separator and equalization tanks).(2)The collection system shall be covered with water seals (traps) on sewers and drains and gas tight covers on junction boxes.(3)Oil-water separators and equalization tanks shall be provided with floating/fixed covers. The off-gas generated shall be treated to remove at least 90% of VOC and eliminate odour. The system design shall ensure safety (prevention of formation of explosive mixture, possible detonation and reduce the impact) by dilution with air/inert gas, installing LEL detector including control devices, seal drums, detonation arrestors, etc. The system shall be designed and operated for safe maintenance of the collection and primary treatment systems.(4)Wastewater from aromatics plants (benzene and xylene plants) shall be treated to remove benzene total aromatics to a level of 10, 20 ppm respectively before discharge to effluent treatment system without dilution.] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]

4. [Sugar industry [Substituted by Notification No. G.S.R. 35(E), dated 14.1.2016 (w.e.f. 19.11.1986).]	Effluents	All concentration values are in milligramme per litre except for pH

pH	5.5 - 8.5
Total Suspended Solids (TSS), milligramme per litre	100 (for disposal on land)30 (for disposal in surface waters)
Biological Oxygen Demand, BOD [3 days at 270C], milligramme per litre	30 (for disposal in surface waters)
Oil Grease milligramme per litre	10
Total Dissolved Solids (TDS), milligramme per litre	2100
Final waste-water discharge limit	200 litre per tonne of cane crushed
(Final treated effluent discharge restricted to 100 litre per tonne of cane crushed and Wast water from spray pond overflow or cooling tower blow down to be restricted to 100 litre per tonne of cane crushed and only single outlet point form unit is allowed.)	
Emissions	
The particulate matter emissions from the stack shall be less than 150 milligramme per normal cubic metre]	

4.

(1)Treated effluent Irrigation protocol and waste water conservation or waste water management in Sugar industries(i)Loading rates for different soil textures

S.N	Soil Texture	Loading rate in m3/Ha/Day
1	Sandy	225 to 280
2	Sandy loam	170 to 225
3	Loam	110 to 170
4	Clay loam	55 to 110
5	Clay	35 to 55

(ii)Waste water conservation and pollution control management

1. Establishment of cooling arrangement and polishing tank for recycling the excess condensate water to process or utilities or allied units.

2. Effluent Treatment Plant to be stabilized one month prior to the start of the crushing season and continue to operate one month after the crushing season.

3. During no demand period for irrigation, the treated effluent to be stored in a seepage proof lined pond having 15 days holding capacity only.

4. Flow meter to be installed in all water abstraction points and usage of fresh water to be minimized.

5. Suitable Air pollution control devices to be installed to meet the particulate matter emission standard.

5.Thermal power plants		Maximum,limiting concentration, milligramme per litre (except for pH andtemperature)
Condensercooling waters	pH	6.5- 8.5
(oncethrough cooling system)	Temperature	Notmore than 5°C higher than the intake water temperature
	Freeavailable chlorine	0.5
Boilerblowdowns	Suspendedsolids	100
	Oiland grease	20
	Copper(total)	1.0
	Iron(total)	1.0
Coolingtower blowdown	Freeavailable chlorine	0.5
	Zinc	1.0
	Chromium(total)	0.2
	Phosphate	5.0
	Othercorrosion inhibiting material	Limitto be established on case by case basis by Central Board in caseof Union territories and State Boards in case of States
Ashpond effluent	pH	6.5- 8.5
	Suspendedsolids	100
	Oiland grease	20

[Standards for Discharge of Effluents from Textile Industry [Substituted by Notification No. G.S.R. 978 (E), dated 10.10.2016 (w.e.f. 19.11.1986).]

S.No.	Industry	Parameter	Standard(applicablefor all modes of disposal*)
1	2	3	4
6	AllIntegrated textile units, units of Cotton/ Woollen/	TREATEDEFFLUENTS	Maximumconcentration values in mg/l

	Carpets/Polyester, Units having Printing/ Dyeing/ Bleaching process ormanufacturing and Garment units.	except for pH, colour, and SAR
pH	6.5to 8.5	
SuspendedSolids	100	
Colour,P.C.U. (Platinum Cobalt Units)	150	
Bio-ChemicalOxygen DemoC](BOD3)	30	
Oiland Grease	10	
ChemicalOxygen Demand (COD)	250	
TotalChromium as (Cr)	2.0	
Sulphide(as S)	2.0	
PhenolicCompounds (as C6H5OH)	1.0	
TotalDissolved Solids, Inorganic (TDS)	2100**	
SodiumAbsorption Ratio (SAR)	26**	
AmmonicalNitrogen (as N)	50	

Notes:

1. *In case of direct disposal into rivers and lakes, the Central Pollution Control Board (CPCB) or State Pollution Control Boards/ Pollution Control Committees (SPCBs/ PCCs) may specify more stringent standards depending upon the quality of the recipient system.

2. **Standards for TDS and SAR shall not be applicable in case of marine disposal through proper marine outfall.

3. The treated effluent shall be allowed to be discharged in the ambient environment only after exhausting options for reuse in industrial process/ irrigation in order to minimise freshwater usage.

4. Any textile unit attached with the Common Effluent Treatment Plant (CETP) shall achieve the inlet and treated effluent quality standards as specified in serial number 55 of Schedule-I to the Environment (Protection) Rules, 1986 and shall also be jointly and severally responsible for ensuring compliance.

5. The standalone Micro, Small and Medium Enterprises (MSMEs) as per the MSME Development Act, 2006 shall meet the values specified above.

6. The standalone large scale units shall meet the values specified above; however, CPCB or SPCBs/ PCCs with the approval of CPCB, may mandate Zero Liquid Discharge in Large scale units in environmentally sensitive/ critical areas.

7. The TDS value with respect to treated effluent shall be 2100 milligramme per litre; however, in case where TDS in intake water is above 1100 milligramme per litre, a maximum contribution up to 1000 milligramme per litre shall be permitted provided the maximum value of 3100 milligramme per litre is not exceeded in the treated effluent.]

The special parameters are to be stipulated by the Central Board in case of Union territories State Boards in case of States depending upon the dye used in the industry. Where the industry uses chrome dyes. sulphur dyes and or phenolic compounds in the dyeing/ printing process, the limits on chromium of 2 mg/litre, sulphides of 2 mg/litre, and phenolic compounds of 5 mg/litre, respectively shall be imposed.Where the quality requirement of the recipient system so warrants, the limit of BOD should be lowered upto 30 according to the requirement by the State Boards for the States and the Central Board for the Union territories.A limit on sodium absorption ratio of 26 should be imposed by the State Boards for the the Central Board for the Union territories if the disposal of the effluent is to be made on land.

7. Composite woolen mills		Concentration not to exceed, milligramme per litre(except for pH and bio-assay)
	Common:	
	Suspended solids	100
	PH	5.5 - 9.0
	[BOD (3 days at 27°C)] [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	100
	Oil and grease	10
	Bio-assay	90% survival of fish after 96 hours

Special:	
Total chromium (as Cr)	2
Sulphide(as S)	2
PhenolicCompounds (as C6H5OH)	5

Sl.No.	Industry	Parameter	Standards
1	2	3	4

The special parameters are to be stipulated by the Central Board in case of Union territories and State Boards in case of State depending upon the dye used in the industry. Where the industry uses chrome dyes, sulphur dyes and or/phenolic compounds in the dyeing/printing process, the limits on chromium of 2 mg/litre, sulphides of 2 mg/litre and phenolic compounds of 5 mg/litre respectively shall be imposed.Where the quality requirement of the recipient system so warrants, the limit of BOD should be lowered upto 30 according to the requirement by the State Boards for the State and the Central Board for the Union territories.A limit on sodium absorption ratio of 26 should be imposed by the State Boards for the States and the Central Board for the Union territories if the disposal of the effluent is to be made on land.[TABLE] [Substituted by Notification No. G.S.R. 266 (E) dated 30.3.2012 (w.e.f. 19.11.1986)]

Sl.No.	Industry	Parameter	Standard
(1)	(2)	(3)	(4)
8	Dye and DyeIntermediate Industry	A.Emission Standards (Process)	
			Limitingconcentration in milligramme/Normal cubic metre (mg/Nm3), unlessotherwise stated
Oxides of Sulphur(SOx)	200		
HCl (Acid Mist)	35		
Ammonia (NH3)	30		
Chlorine (Cl2)	15		
Note:Allprocess vents shall have chimney height of atleast two metresabove the shed or building where equipment is installed.			
B. Effluent Standards			
	Limitingconcentration not to exceed in milligramme/litre (mg/l), exceptfor pH, Temperature,		

	Colour and Bioassay.		
	disposal insurface water	marine disposa	on land forirrigation
pH	6.0 to 8.5	5.5 – 9.0	5.5 – 9.0
Suspended Solids	100	-	200
BiochemicalOxygen Demand - BOD (3 days, 27°C)	30	100	100
Chemical OxygenDemand (COD)	250	250	-
AmmonicalNitrogen as N	50	50	-
Temperature	shall not exceed5°C above the receiving water	-	
Colour (Hazenunit)	400	-	-
Mercury (Hg)	0.01	0.01	-
HexavalentChromium (Cr+6) 0.1	0.1	1.0	-
Total Chromium(Cr)	2.0	2.0	-
Copper (Cu)	2.0	3.0	-
Zinc (Zn)	5.0	15.0	-
Nickel (Ni)	3.0	5.0	-
Lead (Pb)	0.1	2.0	-
Manganese (Mn)	2.0	2.0	-
Cadmium (Cd)	0.2	2.0	-
Chloride (Cl-)	1000	-	-
Sulphate(SO42-)	1000	-	-
Phenolic Compoundsas C6H5OH	1.0	5.0	-
Oil Grease	10.0	10.0	10.0
Bio-assay Test(with 1:8 dilution of effluents)	90% survival ofTest animals after 96 hours* in 100% effluent	-	-

*The Bioassay test shall be conducted as per IS: 6582: 1971.Note:(i)In case of disposal of effluent on land by industry directly orthrough a CETP, the industry or, CETP as the case may be, shallbe required to install piezometers for monitoring of groundwater.Atleast, two piezometers for three hectares shall be installedfor a plot size above 10 hectares

with a minimum of 16piezometers. It shall be one per hectare within a minimum of sixpiezometers for a plot of size smaller than 10 hectares, inconsultation with the concerned State Pollution Control Board forsiting of piezometers.(ii) The standards for Chloride andSulphate shall be applicable only for discharge of treatedeffluent into inland surface water courses. However, whendischarged on land for irrigation, the norms for Chloride shallnot be more than 600 mg/l over and above the contents of rawwater and the Sodium Absorption Ratio (SAR) shall not exceed26.(iii) Treated /untreated effluent shall be stored inholding tank(s) in such a manner which would not cause pollutionof groundwater.

C.Emission Standards for Captive Incinerator

	Limitingconcentration in mg/Nm3, unless otherwise stated	SamplingDuration in minutes unless otherwise stated
Paticulate Matter	50	30or more (for sampling of 300 litres of emission)
HCl (Acid Mist)	50	30
SO2	200	30
Carbon Monoxide	100	dailyaverage
Total OrganicCarbon	20	30
Total Dioxins AndFurans	0.1ng TEQ/Nm3	8hours
Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V+Cd+Th+Hg and their compounds	1.5	2hours

Note:i.All monitored values shall be corrected to 11% oxygen on drybasis.ii. The CO2 concentration in tail gas shall not be lessthan 7%.iii.In case, halogenated organic waste is less than

1% by weight ininput waste,all the facilities in twin chamber incineratorshall be designed so as to achieve a minimum temperature of 850 ±25oC in primary chamber and 950oC in secondary combustion chamberand with a gas residence time in secondary combustion chamber notless than two seconds.orAllthe facilities in single chamber incinerator for gaseoushazardous waste shall be designed so as to achieve a minimumtemperature of 950 oC in the combustion chamber with a gasresidence time not less than two seconds.iv.In case halogenated organic waste is more than 1% by weight ininput waste, waste shall be incinerated only in twin chamberincinerators and all the facilities shall be designed to achievea minimum temperature of 850± 25oC in primary chamber and1100 oC in secondary combustion chamber with a gas residence timein secondary combustion chamber not less than two seconds.v.Scrubber meant for scrubbing emissions from incinerator shall notbe used as quencher.vi.Incineration plants shall be operated, (i.e., combustionchambers) with such temperature, retention time and turbulence,as to achieve Total Organic Carbon (TOC) content in theincineration ash and residue less than 3%, and the loss onignition for ash and residue is less than 5% of the dry weight.In case of non-conformity, ash and residue, as the case may beshall be re-incinerated.vii. Theincinerator shall have a chimney of at least thirty metresheight.

D.Effluent Standards for Incinerator

Note:(i)Effluent from scrubber (s) and floor washing shall flow throughclosed conduit or pipe network and be treated

		to comply with theeffluent standards mention at ‘B’ above.(ii) The built upin Total Dissolved Soilds (TDS) in wastewater of floor washingsshall not exceed 1000 mg/l over and above the TDS of raw waterused.	
		E.Stormwater	
		Note:(i)Stormwater shall not be allowed to mix with scrubber water and/orfloor washings.(ii)Stormwater shall be channelized through separate drains passingthrough a HDPE lined pit having holding capacity of 10 minutes(hourly average) of rainfall.”.	

The standards for chlorides and sulphates are applicable or discharge into inland and surface water courses. However. when discharged on land for irrigation, the limit for chloride shall not be more than 600 milligrammes per litre and the sodium absorption ratio shall not exceed 26.

[S.No. [Substituted by Notification No. G.S.R. 266 (E) dated 30.3.2012 (w.e.f. 19.11.1986)]	Industry	Parameter	Standard
(1)	(2)	(3)	(4)
9	Electroplating,Anodizing Industry	A-EffluentStandards	
			LimitingConcentration in mg/l, except for pH and Temperature
		(i) CompulsoryParameters	
		pH	6.0 to 9.0
		Temperature	Shall not exceed5°C above the ambient temperature of the receiving body
		Oil and Grease	10

Suspended Solids	100
Total Metal*	10
Trichloroethane	0.1
Trichloroethane	0.1
(ii) SpecificParameter as per process	
a.Nickel and Chrome plating	
AmmonicalNitrogen, as N	50
Nickle, as Ni	
HexavalentChrommium, as Cr	0.1
Total Chromium, asCr	2
Sulphides, as S	2
Sulphates, as SO4-2	400
Phosphates, as P	5
Copper as Cu	3
b.Zinc plating	
Cyandies, (as CN-)	0.2
AmmonicalNitrogen, as N	50
Total ResidualChlorine, as Cl	1
HexavalentChromium, as Cr	0.1
Total Chromium, asCr	2
Zinc, as ZN	5
Lead, as Pb	0.1
Iron, as Fe	3
c.Cadmium plating	
Cyanides, (as CN-)	0.2
AmmonicalNitrogen, as N	50
Total ResidualChlorine, as Cl	1
HexavalentChromium, as Cr	0.1
Total Chromium, asCd	2
Cadmium, as Cd	2
d.Anodizing	
AmmonicalNitrogen, as N	50
Total ResidualChlorine, as Cl	1
Aluminium	5
Flourides, as F	15
Sulphates, as SO42-	400
Phosphates, as P	5

e.Copper, Tin plating	
Cyanides, (as CN-)	0.2
Cooper, as Cu	3
Tin	2
f.Precious Metal plating	
Cyanides. (as CN-)	0.2
Total ResidualChlorine, as Cl	1
B.-EmissionStandards+	
	Limitingconcentration in mg/m3 unless stated
(i)Compulsory parameters	
Acid mist (HCIH2 SO4)**	50
(ii)Specific parameters as per process	
a.Nickle Chromium plating	
Nickle**	5
HexavalentChromium**	0.5
b.Zinc, Cooper or Cadmium plating	
Lead**	10
Cyanides,(Total)**	5

* 'Total Metal'shall account for combined concentration ofZn+Cu+Ni+Al+Fe+Cr+Cd+Pd+Sn+Ag in the effluent.+ Emissionstandards shall be applicable to electroplating units havingwater consumption atleast 5 m3/day. These units shall channelizetheir emission through a stack or chimney having height at least10 metres above ground level or 3 metres above top of shed orbuilding of the unit, whichever is more.** The existing unitsshall comply with the norms of asterisked pollutants by 1stJanuary 2013. However, new units shall comply with the norms witheffect from commissioning of plant.

C.Stormwater

Note :(i)Stormwater for a unit (having plot size atleast 200 squaremetres) shall not be allowed to mix with scrubber water, effluentand/or floor washings.(ii) Stormwater within the batterylimits of a unit shall be channelized through separate drain/pipepassing through a High Density

Polyethlene (HDPE) lined pithaving holding capacity of ten minutes (Hourly average) ofrainfall.]

[Substituted by Notification No. G.S.R. 496(E), dated 9.5.2016 (w.e.f. 19.11.1986).]

[S. No.	Industry	Parameter	Standards
(1)	(2)	(3)	(4)
10.	Cement Plant (without co processing), Standalone ClinkerGrinding Plant or, Blending Plant	A – Emission Standards	
(i) Rotary Kiln –without co processing			
	Date of Commissioning	Location	Concentration not to exceed, in mg/Nm3
	(a)	(b)	(c)
Sulphur Dioxide (SO2) in mg/ Nm3	Irrespective of date of commissioning	Anywhere in the country	100, 700 and 1000 when pyritic sulphur in the limestone isless than 0.25%, 0.25 to 0.5% and more than 0.5% respectively.
Oxides of Nitrogen (NOx) in mg/ Nm3	After the date of notification (25.8.2014)	Anywhere in the country	(1) 600
	Before the date of notification (25.8.2014)	Anywhere in the country	(2) 800 for rotary kiln with InLine Calciner (ILC) technology.(3) 1000 for rotary kiln using mixed stream of ILC, SeparateLine Calciner (SLC) and suspension preheater technology or SLCtechnology alone or without calciner.

(i)The timeline for implementation of emission standards for all the parameters i.e. Sulphur Dioxide (SO2), Oxides of Nitrogen (NOx) and Particulate Matter (PM), with respect to Rotary Kiln without co-processing shall be up to the 31st March, 2017.(ii)The emission standards for Sulphur Dioxide (SO2) shall be reviewed after a period of five years from the date of notification of these rules.(iii)The word 'NO2' shall be substituted by 'NOx' wherever it occurs in the notification vide G.S.R. 612(E) dated 25th August, 2014.]

[S. No.	Industry	Parameter	Standards
(1)	(2)	(3)	(4)
10A.	Cement Plant with coprocessing of wastes	A- Emission Standards	

Rotary Kiln - with co-processing of Wastes			
	Date of Commissioning	Location	Concentration not to exceed, in mg/ Nm3
(a)	(b)	(c)	
Particulate Matter (PM)*	on or after the date of notification (25.8.2014)	anywhere in the country	30
before the date of notification (25.8.2014)	critically polluted area or urban centres with populationabove 1.0 lakh or within its periphery of 5.0 kilometer radius	30	
other than critically polluted area or urban centres	30		
SO2*	irrespective of date of commissioning	anywhere in the country	100, 700 and 1000 when pyritic sulphur in the limestone isless than 0.25%, 0.25 to 0.5% and more than 0.5% respectively.
NOx*	After the date of notification (25.8.2014)	anywhere in the country	(1) 600
Before the date of notification	anywhere in the country (25.8.2014)	(2) 800 for rotary kiln with InLine Calciner (ILC) technology.(3) 1000 for rotary kiln using mixed stream of ILC, SeparateLine Calciner (SLC) and suspension pre-heater technology or SLCtechnology alone or without calciner.	

		HCl	10 mg/ Nm3
HF	1 mg/Nm3		
TOC	10 mg/ Nm3**		
Hg and its compounds	0.05 mg/ Nm3		
Cd + Tl and their compounds	0.05 mg/ Nm3		
Sb + As + Pb + Co + Cr + Cu + Mn + Ni + V andtheir compounds	0.5 mg/ Nm3		
Dioxins and Furans	0.1 ngTEQ/ Nm3		

Note:The abbreviations usedin the Table shall mean as under: SO2- Sulphurdioxide; NOX- Oxides of Nitrogen; HCl - HydrogenChloride; HF - Hydrogen Flouride; TOC - Total Organic Carbon; Hg- Mercury; Cd - Cadmium; Tl - Thallium; Sb - Antimony; As -Arsenic; Pb - Lead; Co - Cobalt; Cr - Chromium; Cu - Copper; Mn -Manganese; Ni - Nickel; and V - Vanadium.* The concentration values andtimeline for implementation in respect of PM, SO2 and NOx shallbe governed in accordance with the provisions under notificationpublished vide GSR No. 612 (E), dated the 25thAugust,2014 and amended from time to time.** Permitting authority mayprescribe separate standards on case to case basis, if TotalOrganic Carbon (TOC) does not result from the co-processing ofwaste.The height of each individualstack connected to Kiln, Clinker Cooler, Cement Mill, Coal Mill,Raw Mill, Packaging section, etc. shall be of a minimum of 30metres or, as per the formula H = 14 (Q1)0.3and H =74 (Q2)0.27whichever is more, where “H”is the height of stack in metres and “Q1” is themaximum quantity of SO2expected to be emitted inkg/hr and “Q2” is the maximum quantity of PMexpected to be emitted in tonnes/hr through the stack at 100percent rated

capacity of the plant;The monitored values of SO2,NOx, HCl, HF, TOC, Metals and Dioxins and Furans atmain kiln stack shall be corrected to 10% Oxygen, on dry basisand the norms for SO2, NOx, HCl, HF, TOC,Metals and Dioxins and Furans shall be applicable to main kilnstack and the norms for Particulate Matter (PM) shall beapplicable to all the stacks in the plant. PM, SO2,NOxshall be monitored continuously. HCl, HF, TOC,Metals and Dioxins and Furans shall be monitored once in a year;Scrubber meant for scrubbing emissions shall not be usedas quencher and plants having separate stack for gaseousemission for the scrubbing unit, the height of this stack shallbe at least equal to the main stack.

B - Service wastewater (with co-processing of wastes)All efforts shall be made by the industry for 'zero discharge'of service wastewater and in case, the industry prefers todischarge service wastewater, the following norms shall becomplied with:

	Concentration not to exceed, milligram per litre (except pHand temperature)
pH	5.5 to 9.0
Suspended Solids	100
Oil and Grease	10
Temperature	not more than 5°C higher than the intakewater temperature

C - Storm waterStorm-water shall not beallowed to mix with effluent, treated sewage, scrubber water andor or floor washings.Storm-water within battery limits of industry shall bechannelized through separate drain(s).]

[Inserted by Notification No. G.S.R. 497(E), dated 10.5.2016 (w.e.f. 19.11.1986).]

11. Stone crushingunit]	Suspendedparticulate matter	Thesuspended particulate matter measured between 3 metres and 10metres from any process equipment of a stone crushing unit shallnot exceed 600 micro-grammes per cubic metre.

[* * *]

13. [
[Substituted by Notification No. G.S.R. 221 (E) dated 18.3.2011 (w.e.f. 19.11.1986)]

RubberProcessing and Rubber Product Industry

A.Effluent Standards (i) Natural Rubber Processing : Centrifugingand Creaming Units

Limitingvalue for concentration in mg/l, except for pH

	Inland SurfaceWater	Land forIrrigation Public Sewar
pH	6.0-8.5	6.0-8.5
Suspended Solids	100	200
BOD, 3 days at27°C	30	100
COD	250	-
Oil and Grease	10	10
Total KjeldahiNitrogen, as N	100	*
Free Ammonia	5	*
AmmonicalNitrogen, as N	50	*
Sulphides, as S	2	*
Total DissolvedSolids	2100	2100
(ii)Natural Rubber Processing : Craps and Crumb Units		
pH	6.0-8.5	6.0-8.5
Suspended Solids	100	*
Colour	Colourless	*
Odour	Absent	*
BOD, 3 days at27°C	30	100
COD	250	*
Oil and Grease	10	10
Total KjeldahiNitrogen, as N	50	*

AmmonicalNitrogen, as N	25	*
Sulphides, as S	2	*
Total DissolvedSolids	2100	2100
(iii)Rubber Products (Moulded, Extruded orCalendared/Fabricated/Rubber Reclamation Unit Latex based Unit)		
pH	6.2-8.5	6.0-8.5
Suspended Solids	50	100
Oil and Grease	10	10
BOD, 3 days at27°C	50	*
Lead*	0.1	*
Zinc as Zn*	5	*
Total Chromium	0-05	*
(iv)Tyre and Tube Industry		
pH	6.0-8.5	6.0-8.5
Suspended Solids	50	*
Oil and Grease	10	10
(v)Synthetic Rubber Industry		
pH	6.0-8.5	6.0-8.5
Colour	Absent	*
Odour	Absent	*
BOD, 3 days at27°C	50	*
COD	250	*
Oil and Grease	10	10
*Norms for theseparameters shall be prescribed by the concerned State PollutionControl Board/Pollution Control Committee on case basis.		
B. EmissionStandards* (Rubber Product Industry i.e. Moulded, Extruded orCalendared/Fabricated/Rubber Reclamation Unit/Latex based Unit)		
	Concentration notto exceed in mg/Nm3	

		Particulate Matter 150 Volatile OrganicCompounds 50 *These emissionstandards shall not be applicable to SSI units. NOTE : Allrubber units shall channelize their fugitive emission through astack having height of 12 metres or 2 metres above roof top ofshed/building whichever is more.]
14. Small Pulp andPaper Industry	Concentration notto exceed milligramme per litre (except for pH and sodiumabsorption ratio)	
*Discharge intoinland surface water Disposal on land	pH	5.5–9.0
	Suspended solids	100
	BOD	30
	pH	5.5–9.0
	Suspended solids	100
	BOD	100
	Sodium AbsorptionRatio	26
	[AbsorbableOrganic Halogens (AOX) in effluent discharge [Inserted by Notification No. G.S.R. 546(E), dated 30.8.2005 (w.e.f. 19.11.1986).]	3.00kg/ton of paper produced with effect from the date of publicationof this notification2.00 kg/ton of paper produced with effectfrom the 1st day of March, 2006;]

Explanation. - These standards shall apply to all small scale Pulp and Paper Mills having capacity below 24,000 MT per annum.

15. Fermentation Industry (Distilleries,	Concentration in the effluent not to exceed milligramme per litre

Maltries and Breweries)		(except for pH and colour and odour)
	pH	5.5 - 9.0
	Colourand odour	[All efforts should be made to remove colour and unpleasant odour as far as practicable.
	Suspended solids	100
	[BOD (3 days at 27 [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]°C)]	
	- Disposal into inland surface water/river/streams	30mg1
	- Disposal on land or for irrigation	100 mg/1.]

Note (1). - Waste-water generation shall not exceed 250 cubic metre per tonne of paper produced.[***] [Notes 2 to 7 and entries relating thereto omitted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]

16. LeatherTanneries		Concentration inthe effluent not to exceed milligramme per litre (except for pHand per cent sodium)			
		InlandSurface Waters	PublicSewers	Landfor Irrigation	MarineCoastal Areas
	(a)	(b)	(c)	(d)	
Suspended Solids	100	600	200	100	
[BOD (3 days at27°C)]	30	350	100	100	
pH	6.0-9.0	6.0-9.0	6.0-9.0	6.0-9.0	
Chlorides (as Cl)	1000	1000	600	-	
Hexavalent Chromium (Cr+6)	0.1	0.2	0.1	1.0	
Total Chromium (asCr)	2.0	2.0	2.0	2.0	
Sulphides (as S)	2.0	5.0	-	5.0	
Sodium per cent	-	60	60	-	
Boron (as B)	2.0	2.0	2.0	-	
Oil and grease	10	20	10	20	

17. [[Substituted by Notification No. G.S.R. 1607(E), dated 29.12.2017 (w.e.f. 19.11.1986).]	Fertilizer Industry	A .- Effluent Standards

(i) Straight Nitrogenous FertilizerPlant/Ammonia (Urea Plant), Calcium Ammonium Nitrate and AmmoniumNitrate Fertilizers

	Limiting concentration not to exceed inmilligram/litre (mg/l), except for pH	
pH	6.5 to 8.5	
Suspended Solids	100	
Oil and Grease	10	
Ammonical Nitrogen as N	50	
Total Kjeldhal Nitrogen (TKN) as N	75	
Free Ammonical Nitrogen as N	2.0	
CN concentration	0.1	
Nitrate Nitrogen as N	Urea Plant	10
Other than Urea Plant	20	
(ii) Straight Phosphatic Fertilizer Plant		
pH	6.5 to 8.5	
Suspended Solids	100	
Oil and Grease	10	
Fluoride	10	
Dissolved Phosphate as P	5.0	
(iii) Complex Fertilizer Plant and / orNP/NPK(N-Nitrogen, P-Phosphorus and K-Potassium)		
pH	6.5 to 8.5	
Suspended Solids	100	
Oil and Grease	10	
Ammonical Nitrogen as N	50	
Total Kjeldhal Nitrogen (TKN) as N	75	
Free Ammoniacal Nitrogen as N	4.0	
Total Kjeldhal Nitrogen (TKN) as N	75	
Free Ammoniacal Nitrogen as N	4.0	
Nitrate Nitrogen as N	20	
Dissolved Phosphate as P	5.0	
Fluoride as F-	10	

Note:(i)Chromium salt shall not be used in cooling tower as algaecide.(ii) The effluent shall be analysed for Vanadiumand Arsenic once in a year and analysis report shall be submittedto the concerned

State Pollution Control Board / PollutionControl Committee.		
B .- Emission Standards		
(i) Straight Nitrogenous		
(a) Ammonia Plant- Reformer		
Oxides of Nitrogen (as NO2)	400 mg/Nm3	
(b) Urea Plant – Prilling Tower		
Particulate Matter	Pre 1982 units	150 mg/Nm3
Post 1982 units	50 mg/Nm3**	
(ii) Ammonium Nitrate/ Calcium AmmoniumNitrate/NPK plant		
Particulate Matter	Existing Plant	150 mg/Nm3
New Plant	100 mg/ Nm3	
Ammonium as NH3	Existing Plant	300 mg/Nm3
New Plant	150 mg/Nm3	
Total Fluoride as F-	10 mg/Nm3(only NPK Plant)	
(iii) Phosphatic Fertilizer Plants –Phosphoric Acid Plants/ Rock grinding and Acidulation SSP Plants		
Particulate Matter	125 mg/Nm3	
Total Fluoride as F-	20 mg/Nm3	
(iv) Nitric Acid Plant		
Oxides of Nitrogen (as NO2)	400 mg/Nm3	

*Values to bereported at 3% O2** Total emission of0.5 kg/ tonne of product.Note:(i)Fluoride norms shall be applicable only for NPK plant.(ii) Plantcommissioned on or after the date of notification, shall betreated as 'New Plant'.(iii) The height ofthe stack emitting Sulphur Dioxide, Oxides of Nitrogen or Oxidesof Phosphorus or acid mist shall be a minimum of 30 metres or asper the formula H=14 (Q)0.3, whichever is more, where “H”is the height of stack in metres and “Q” is themaximum quantity of SO2 NOx or P2O5 equivalent expected to beemitted in kg/hr through the stack at 100 per cent rated capacityof the tail gas plant(s) and calculated as per the norms ofgaseous emission.(iv) Tail Gas plantshaving more than one stream or unit of Sulphuric Acid, NitricAcid or Phosphoric Acid at one location, the combined capacity ofall the streams or units for a particular acid shall be takeninto consideration for determining the stack height andapplicability of emission standards individually.(iii) Tail gas plants having separate stack forgaseous emission for the scrubbing

unit, the height of this stackshall be equal to main stack or 30 metres, whichever is higher.]

18. Iron OreMining and Ore Processing	A.Emission Standards for Stack for De-dusing Unit
Particulatematter	100mg/Nm3
Stackheight**	15.0 m
**Stack height for De-dusting unit shall be calculated as H=74 Q0.27, where H and Q are stack height in metre and particulatematter (PM) emission in tonner/hr respectively, i.e.	
Q(kg/hr)Up to 2.712.72 – 7.867.87 –17.9617.97 – 35.29	H(metre)15202530
Note:-Stackattached to De-dusting unit shall have minimum height of 15.0metres and would be atleast 2.50 metres above the top-most pointof the nearby building/shed or plant in the mine.	
B.Fugitive Emission Standards	
Particulatematter	1200µ100mg/Nm3
Note:-Fugitive emission shall be monitored in the predominant downwinddirection at a distance0 25.0+2.0 metres from the source offugitive emission as per following :	
Area	Monitoringlocation
Mine face/Benches	Drillingexcavation and loading applicable for operation benches abovewaterable

Haul Roads/ServiceRoads	Haul roads to oreprocessing plant, waste dumps and loading areas and service road
Crushing plant	Run-off mineunloading at hopper, crushing areas, screens and transfer points.
Screening Plant	Screens, conveyingand transportation of ore discharge points
Ore Storage andLoading	Intermediate stockbin/pile areas ore stock bin/pile areas , wagon/truck loadingareas
Waste dump	Activewaste/reject dumps
C.Effluent Standards	
pH	5.5-9.0
Suspendedsolids (non-rainy day)	50mg/l
Suspendedsolids (railny day)	100mg/l
Oiland grease	10mg/l
Note:-(I)All efforts shall be made to reuse and rel-circulate the treatedeffluent.(ii) The aforesaid effluent standards shall becomplied with for sewage, service water, beneficiation of orewashwater and surface run-off put together	
19. CalciumCarbide	Particulate MatterEmission :
-Kiln	250 milligrammeper

	normal cubic metre			
-Arc Furnace	150 milligrammeper normal cubic metre			
20. Carbon Black	Particulate MatterEmission :	150 milligrammeper normal cubic metre		
21. [] Copper, Leador Zinc Smelting Plant		Emission standards		
	a. ConcentratorExisting Unit	New Unit		
Particulate Matter(mg/Nm3)	100	75		
	b. Sulphur-DioxideRecovery Unit Limitting Concentration in mg/Nm3 Plant capacityfor 100% convertible concentration of Sulphuric Acid (time/day)	Existing Unit	New Unit	
Sulphur-Dioxide(So2)	Upto300	1370		1250
Above300	1250		950	
Acid Mist/SulphurTrioxide	Upto300	90		70
Above300	70		50	
Note:-1. Capacity in above stipulation means the installedcapacity of Sulphuric Acid Plant.2. Scrubbing units shallhave on-line pH meters with auto recording facility.3. Plantcommissioned on or after the date of notification, shall betermed as 'New Unit.'4. The height of the Stack emittingSulphur Dioxide or acid mist shall be a minimum of 30 meters oras per the formula H =				

14(Q)0.3(whichever is more),where “H” is the height of stack in metres; and “Q”is the maximum quantity of SO2in kg/hr, expected tobe emitted through the stack at 110 per cent rated capacity ofthe Tail Gas plant(s) and calculated as per the norms of gaseousemission.5. Tail Gas plants having more than one stream orunit of sulphuric acid at one location, the combined capacity ofall the streams or units shall be taken into consideration fordetermining the stack height and applicability of emissionstandards.6. Tail Gas plants having separate stack forgaseous emission for the scrubbing unit, the height of this stackshall be equal to main stack or 30 metres, whichever is higher.				
22. Nitric Acid(emission oxides of nitrogen)	Emission of Oxidesof Nitrogen	3 kilogramme ofoxides of nitrogen per tone of weak acid (before concentration)produced		
23. [SulphuricAcid Plant]	Emission standards			
		Limitingconcentration in mg/Nm3, unless started		
		Plant capacity for100% concentration of Sulphuric Acid (tonne/day)	ExistingUnit	NewUnit
	Sulphur dioxide	(SO2)up to 300	1370	1250
		Above 300	1250	950
	Acid Mist/Sulphur	Up to 300	90	70

	Trioxide	Above 300	70	50

Note. - (i)Scrubbing units shall have on-line pH meter with auto recordingfacility.

(ii) The height ofthe stack emitting sulphur-dioxide or acid mist shall be ofminimum of 30 metre or as per the formula H = 14 (Q)(0.3)(whichever is more).

Where "H"is the Height of stack in metre; and "Q" is the maximumquantity of So2expected to be emitted through thestack at 110 per cent rated capacity of the plants and calculatedas per the norms of gaseous emission.

(iii) Plantshaving more than one stream or unit of sulphuric acid at onelocation, the combined capacity of all the streams and unitsshall be taken into consideration for determining the stackheight and applicability of emission standards.

(iv) Plants havingseparate stack for gaseous emission for the scrubbing unit, theheight of this stack shall be equal to main stack.]

S.No.	Industry	Parameter	Standard
24.	Integrated Ironand Steel Plant	A-Coke oven(by-product type)	
a. EffluentStandards			
	Limitingconnecntration in mg/l, except for		

	pH
pH	6.0-8.50
Suspended solids	100
BOD, 3 days at27°C	30
COD	250
Oil and grease	10
Ammonical nitrogenas N	50
Cyandie (as CN-)	0.2
Phenol	1.0

b. EmissionStandards

	New Batteries (atgreen field site)	Rebuild Batteries	Existing Batteries
(i) FugitiveVisible Emission			
Leakage from door	5(PLD)*	10(PLD)*	10(PLD)*
Leakage fromcharging lids	1(PLL)**	1(PLL)**	1(PLL)**
Leakage from APCovers	4(PLO)+	4(PLO)+	4(PLO)+
Charging emission(Second/charge)	16(with HPLA)	50(with HPLA)	75
*PLD- Percentleaking doors; **PLL-Percent leaking lids;			
+PLO- PercentLeaking off takes and HPLA-Aspiration through high pressureliquor injection in gooseneck.			
(ii) (StackEmission Standards)			
SO2 (mg/Nm3)	800	800	800
NOx (mg/Nm3)	500	500	500
Particulate matter(mg/Nm3)	50	50	50
Particulate matterduring charging of stamp charging batteries (mg/Nm3)	25	25	25
Sulphur in COkeOven gas used for heating (mg/Nm3)	800	-	-
(iii) FugitiveEmission: Benzo (a) Pyrene (BaP)			

Battery area (topof the battery)(µg/m3)	5	5	5
Other units inCoke oven plant (µg/m3)	2	2	2
B.-Sintering Plant			
a. EffluentStandards			
	Limitingconcentration in mg/l, except of pH		
pH	6.0-8.50		
Suspended solids	100		
Oil and grease	10		
b. EmissionStandards			
Particulate matter(mg/Nm3)	150		
C.- Blast Furance			
a. EffluentStandards			
	Limitingconcentration in mg/l, except for pH		
pH	6.0-805		
Suspended solids(mg/l)	50		
Oil and grease(mg/l)	10		
Cyanide as CN(mg/l)	0.2		
Ammonical Nitrogen as NH3-N (mg/l)	50		
b. EmissionStandards			
(i) StackEmissions			
	NewUnits	ExistingUnits	
BF Stove			
Particulate matter(mg/Nm3)	50	30	
SO2 (mg/Nm3)	250	200	
Nox (mg/Nm3)	150	150	
CO (Vol/Vol)	1%(max)	1%(max)	
(ii) SpaceDeducting/Other Stacks of BF area			
Particulate matter(mg/Nm3)	100	50	

(iii) FugitiveEmission

	ExistingUnits	NewUnits
Particulate matter(Size less than 10 microns) PM10 (µg/m3)	4000	3000
SO2 (µg/m3)	200	150
NOx (µg/m3)	150	120
Carbon monoxide(µg/m3)-8 hours	5000	5000
1hours	10,000	10,000
Lead, as Pb infugitive dust (µg/m3) at Cast House	2	2
D.- Steel MakingShop-Basic Oxygen Furnace		
a. EffluentStandards		
pH (mg/l)	6.0-8.5	
Suspended solids(mg/l)	100	
Oil and grease(mg/l)	10	

(i) Stack Emission

	Existing Units	New Units
Converters		
Particulate matter(mg/Nm3)		
- Blowing/Lancingoperation	300	Should be with gasrecovery
- Normal operation	150	Should be with gasrecovery
**SecondaryFmission Stack : De-dusting of de-sulphurisation, Secondaryrefining etc.		
Particulate matter(mg/Nm3)	100	50

(ii) FugitiveEmission

	ExistingUnits	NewUnits
Particulate matter(size less than 10 microns) PM10 (µg/m3)	4000	3000
SO2 (µg/m3)	200	150

NOx (µg/m3)- 8 hours	5,000	5,000
1 hours	10,000	10,000
Lead, as Pb indust at Converter floor (µg/m3)	2	2
E- Rolling Mills		
a. EffluentStandaeds		
pH	6.0-9.0	
Suspended solids(mg/l)	100	
Oil and grease(mg/l)	10	
b. EmissionStandards		
Particulate matter(mg/Nm3)	150	
Re-Heating		
	Sensitivearea	Otherarea
Particulate matter(mg/Nm3)	150	250
F.- Arc Furnaces		
Emission Standards		
Particulate matter(mg/Nm3)	150	
G.- InductionFurnaces		
Emission Standards		
Particulate matter(mg/Nm3)	150	
H.- CupolaFoundary		
Emission Standards		
	melting capacityless than 3 tonne/hr	melting capacity 3tonne/hr and above
Particulate matter(mg/Nm3)	450	150
SO2 (mg/Nm3)	300, corrected at12% CO2	
I.- CalcinationPlant/Lime Kiln/Dolomite Kiln		
Emission Standards		
	capacity upto40t/day	capacity above40t/dat
Particulate matter(mg/Nm3)	500	150

J.- RefractoryUnit	
Emission Standards	
Particulate matter(mg/Nm3)	150

Note :1.The height of the each process stack shall be a minimum of 30metres or as per the formula H = 14(W)0.3 (Whichever is more),where "H" is the height of stack in metre; and "Q"is the maximum quantity of SO2 in kg/hr expected to be emittedthrough the stack at rated capacity of the plant(s) andcalculated as per the norms of faseous emission.2. The Plantshaving separate stack for gaseous emission for the scrubbingunit, the height of this stack shall be equal to main stack ofthe plant or 30 metres, whichever is higher. 3. It is essentialthat stack constructed over the cupola beyond the charging doorand emissions shall be directed through the stack which should beat least six times the diameter of cupola.4. In respect ofArc Furnaces and induction Furnaces provision shall be made forcollecting the fumes before discharging the emissions through thestack.5. Foundries shall install scrubber, followed by astack of height atleast six times the diameter of

	the Cupolabeyond the charing door.6.Recovery type converters shall beinstalled in new plants or expansion projects. Note:(i)Stromwater shall not be allowed to mix with effluent, scrubberwater and/or floor washings.(ii) Stormwater shall bechannellized through separate drains as per natural gradient,passing through High Density Polyethlene (HDPE) lined pits, eachhaving holding capacity of 10 minutes (hourly average) ofrainfall.		
25. [Thermal PowerPlants]	Particulate MalterEmissions :		
		-generationcapacity 210 MW or more	150 milligrammeper normal cubic meter
		-generationcapacity less than 210 MW	350 milligrammeper normal cubic meter

*Depending upon the requirement of local situation, such as protected area, the State Pollution Control Boards and other implementing agencies under the Environment (Protection) Act, 1986, may prescribe a limit of 150 milligramme per normal cubic metre, irrespective of generation capacity of the plant.

26.[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]		
[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]
	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]
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	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]
	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]
27. [All types of Asbestos manufacturing units (including all processes involving the use of Asbestos)] [Inserted by G.S.R. 913(E), dated 24-10-1989 (w.e.f. 24-10-1989).]	Emissions	
	[-Pure Asbestos material [Substituted by Notification No. G.S.R. 46(E) dated 3.2.2006 (w.e.f. 19.11.1986)]	0.5 fibre */cc for one year from the date of notification
		0.2 fibre */cc after one year from the date of notification]
	-Total dust	4 Fibre */cc
		2 mg/m3(normal)
28. Chlor Alkali (Caustic soda)	Emissions	Concentrations in mg/m3(normal)
(a) mercury Cell	Mercury (from hydrogen gas holder stack)	0.2
(b) All processes	Chlorine (from hypo tower)	15.0
(c) All processes	Hydrochloric acid vapours and mist(from hydrochloric acid plant)	35.0
29. Large pulp and paper	Emissions	Concentrations in mg/m3(normal)
	Particulale matter	250**
	H2S	10

*Fibre of length more than 5 micrometre and diameter less than 3 micrometre with an aspect ratio of 3 or more.**This standard of 250 mg/m³ (normal) shall apply only for a period of 3 years with effect from the date on which the Environment (Protection) Second Amendment Rules, 1989, came into force. After three years the standard to be applicable is 15 Mg/m³ (normal).

30. Integrated Iron and Steel PIants:	Emissions	
(a) Coke oven	Particulate matter	50
(b) Refractory material plant	Particulate matter	150

	II. Effluents	Concentration in mg/litre (except for pH)
(a) Coke oven By-product plant :	pH	6.0-8.5
	Suspended solids	100
	Phenol	1.0
	Cyanide	0.2
	[BOD (3 days at 27°C)]	30
	COD	250
	Ammonical nitrozen	50
	Oil Grease	10
(b) Other plants such as sintering plant, blast furnace, steel melting and rolling mill :	pH	6.0-9.0
	Suspended solids	100
	Oil Grease	10
31. Re-heating (Reverberatory)	Emissions	Concentrations in mg/m3(normal)
Furnaces:		
Capacity: All sizes		150
Sensitive area	Particulate matter	
Other area	Particulate matter	450]
32. [Foundries] [Inserted by G.S.R. 742(E), dated 30-8-1990 (w.e.f. 30-8-1990).]	Emissions	
(a) Cupola		
Capacity (Melting rate):		
Less than 3 Mt/hr.	Particulate matter	450
3 MT/hr. and above	Particulate matter	150

Note. :- It is essential that stack is constructed over the cupola reyood the Charging door and emissions are directed through the stack which should re atleast six times the diameter of cupola.

(b) Arc Furnaces

Capacity: All sizes Particulate matter 150

(c) Induction Furnaces

Capacity: All sizes Particulate matter 150

Note. - In respect of arc furnaces and induction furnaces, provision has to be made for collecting the

fumes before discharging the emissions through the stack.

33. Thermal PowerPlants	StackHeight /Limits	
	Power generationcapacity:	
	- 500 MW andabove	275
	- 200 MW/210 MWand above to less than 500 MW	220
	- Less than 200MW /210 MW	H=14(Q)0.3where Q is emission rate of SO2in kg/hr. and H Stackheight in meters.
	Stream generationcapacity:	
	- Less than 2ton/hr.	2-1/2 times theneighboring building height or 9 metres (whichever is more).
	- More than 2ton/hr. to 5 ton/hr.	12
	- More than 5ton/hr. to 10 ton/hr.	15
	- More than 10ton/hr.	18
	- More than 15ton/hr. to 20 ton/hr.	15
	- More than 20ton/hr. to 25 ton/hr.	24
	- More than 25ton/hr. to 30 ton/hr.	27
	- More than 30ton/hr.	30 or usingformula H=14(Q)0.3(whichever is more) where Q isemission rate of SO2in kg/hr. and H is Stack heightin metres.

34. Small Boilers	Emissions*	
Capacity of Boiler	Particulate matter	
-Iess than 2ton/hr.		1600
-2 to 15 ton/hr.		1200
-More than 15ton/hr.		150
*All emissionsnormalized to 12 per cent carbon dioxide.		
35. [CoffeeIndustry]	Instant/DryProcessing	
		Limiting value forconcentration in mg/1 except for pH
	pH	6.5-8.5

BOD3days, 27°C	100
Total DissolvedSolids	2100
Wet/ParchmentCoffee Processing	
pH	6.5-8.5
BOD3days, 27°C	1000

Notes. -

(i) Coffee growershaving plantation area less than 10 ha with wet processing shallstore primary treated effluent in lined lagoons for solarevaporation with a non-permeable system at the base and sides oflagoon.

(ii) Coffeegrowers having plantation are between 10-25 ha with wetprocessing shall store primary (equalisation and neutralisation)treated effluent in lined lagoons for solar evaporation with anon-permeable system at the base and sides of lagoon.

(iii) Coffeegrowers having plantation area 25 ha or above with wet processingshall store secondary treated effluent in conformity with abovenorms in lined lagoons with a non-permeable lining system at thebase and sides of lagoon and use

	the effluent for irrigationafter dilution so as BOD of diluted effluent for land applicationis less than 100 mg/1.	
	(iv) The minimumliner specifications for a non-permeable lining system shall be acomposite barrier having 1.5 mm High Density Polyethylene (HDPE)geomembrane or equivalent, overlying 90 cm of soil (clay oramended soil) having permeability coefficient not more than1x10-5cm/sec.	
	(v) The effluentstorage facilities/lagoons/solar evaporation ponds shall belocated above high flood level mark of the nearly stream,revulet, etc., with below mentioned free board and away from anywater body/stream at a distance.	
Grower ☐	Small	Medium
	(10 ha)	(10 – 25 ha)
Free Board (cm) ☐	30	60
Distance (m) ☐	50	100
	(vi) Raw, Treatedand/or diluted effluent shall not be discharged into surfacewater body or used for recharging ground water under anycircumstances what	

36. AluminiumPlants	Emissions	
(a) Alumina Plant:		
(i) Raw MaterialHandling	Primary andSecondary Crusher	150
	Particulate matter	
(ii) PrecipitationArea	Particulate Matter	250
-Calcinations	Carbon Monoxide	1% max.
	Stack height	H = 14 (Q)(0.3)where Q is emission rate of SO2in kg/hr. and His Stack height in metres
(b) Smelter Plant		
(i) Green AnodeShop	Particulate matter	150
(ii) [Anode BakeOven [Substituted by Notification No. G.S.R. 46(E) dated 3.2.2006 (w.e.f. 19.11.1986)]	-do-	50 mg/Nm3
(iii) Pot room	Total Fluoride	2.8 kg/ton by 31stDecember 2006
	For Soderberg*Technology	
	For Pre-bakedTechnology	0.8 kg/ton by 31stDecember 2006
*Separatestandards for VSS, HSS, PBSW and PBCW as given in column 4 standsabolished.]		
(c) Standards for forage fluoride -		
	-Twelveconsecutive months average	40 ppm
	-Two consecutivemonths average	60 ppm
	-One month average	80 ppm]
*37. StoneCrushing Unit		

Suspendedparticulate matter (SPM)	The Standardsconsist of two parts: (i) Implementationof the following Pollution Control measures: (a) Dustcontainment cum suppression system for the equipment. (b) Constructionof wind breaking walls. (c) Constructionof the metalled roads within the premises. (d) Regularcleaning and wetting of the ground within the premises. (e) Growing of agreen belong along the periphery. (ii) Quantitativestandard for the SPM: TheSuspended Particulate Matter contribution value at a distance of40 metres from a

		controlled isolated as well as from a unitlocated in a cluster should be less than 600 mg/Nm3.The measurements are to be conducted at least twice a month forall the 12 months in a year.		
38. Petrochemicals(Basic intermediates)	[A. Effluents]			
	PH	6.5-8.5		
	[*BOD (3days at27°C)]	50		
	**Phenol	5		
	Sulphide (as S)	2		
	COD	250		
	Cyanide (as CN)	0.2		
	***Fluoride (as F)	15		
	Total suspendedsolids	1000		
	Hexavalent Chromium (asCR+6)]	0.1		
	****Total Chromium(as CR)	2.0		
B.Emission from Chimney/Stack				
		Limitingconcentration in mg/Nm3, unless stated		
"(Furnace,Boiler, Heater, Vaporiser)		FuelType	Existingplants	NewPlant/Expansion of Existing Plant
Sulphur Dioxide(SO2)	Gas	50	50	
Liquid	1700	850		
Oxides of Nitrogen(NOx)	Gas	350	250	
Liquid	450	350		
Particulate Matter(PM)	Gas	10	05	

Liquid	100	50	
Carbon Monoxide(CO)	Gas	150	100
Liquid	200	150	
	Note,- (i)All values shall be corrected to 3% Oxygen.(ii)Wet scrubber shall necessarily be operated at the time ofdecoking.(iii)Norms for CO shall be monitored only in case of PhthalicAnhydride (PA), Maleic Anhydride (MA), Terephthalic Acid (PTA)and Dimethyl Terephalate (DMT) Plants. Norms for CO emissionsshall not be applicable to PA/MA manufacturing standaloneexisting piants with an installed capacity of less than 30,000metric tonnes per annum, provided that such units have achimney/stack of minimum 30 metres height for emitting CarbonMonoxide.		
	ProcessEmission (Specific Pollutant)		
	Source	Limitingconcentration in mg/Nm3	
		ExitingPlants	NewPlants
Chlorine	EDC/VCM Plant andIncinerator	10	10
Hydrochloric AcidMist	EDC/VCM Plant andIncinerator	30	30

Ammonia	Wastewaterstripper, acrylonitrile plant, carpolacturm plant	75	75
Hydrogen Sulphide	Naphthapre-treatment plant, olefin plant	05	05
Phosgene	(TDI) and (MDI)plant	01	01
HydrogenCyanide(HCN)	Acrylonitrileplant	10	10
VOC (HAPs)-TDI andMDI	TDI,Methylenediphenyl Di-isocyante (MDI) Plants	0.1	0.1
VOC (HAPs),Benzene and Butadiene	Benzene, ButadienePlants	5.0	5.0
VOC(HAPs), EO, VCM, EDC, ACN and PO	EO, VCM, EDC, ACN,PO Plants	20.0	10.0
OrganicParticulate	PA, MA and TDIPlants	50	25
ProcessEmission (General Pollutant)			
	Source	Limitingconcentration in mg/Nm3	
VOC (MA, PA andPhenol)	MA, PA, PhenolPlants	20	
VOC (EB, Styrene,Toluene, Xylene, Aromatics, EG and PG)	Ethyl benzene(EB), Styrene, Toluene, Xylene, Aromatics, EG, PG Plants	10	
VOC (Paraffin,Acetone and Olefins)	Non-methane, HC(paraffin), Acetone, Olefins Plants	150	

Note. - In respect of are furnaces and induction furnaces, provision has to be made for collecting the fumes before discharging the emissions through the stack.*State Boards may prescribe the BOD value of 30 mg/l if the recipient system so demands.**The limit for phenol shall be conformed to at the outlet of effluent treatment of phenol plant. However, at the final disposal point, the limit shall be less than 1 mg/l.***The limit for fluoride shall be confirmed to at the outlet of fluoride removal unit. However, at the disposal point fluoride concentration shall be lower than 5 mg/1.****The limits for total and hexavalent chromium shall be conformed to at the outlet of the chromate removal unit. This implies that in the final treated effluent, total and hexavalent chromium shall be lower than prescribed therein.[NOTE.- HAP - Hazardous Air Pollutants are those pollutants that cause cancer or other serious health effects, or adverse environmental and ecological effects.C. Standards for Fugitive EmissionStorage of Volatile Liquids: General Petrochemical/ Petroleum Products.(1)Storage tanks with capacity between 4 to 75m3 and total vapour pressure (TVP) of more than 10 kpa should have fixed roof with pressure value vent.(2)Storage tanks with capacity between 75 to 500 m3 and total vapour pressure (TVP) of 10 to 76 kpa should have internal floating roof or external floating roof or fixed roof with vapour control or vapour balancing system.(3)Storage tanks

with the capacity of more than 500 m3 and total vapour pressure (TVP) of 10 to 76 kpa should have internal floating roof or external floating roof or fixed roof with vapour control system.(4)The tanks with the capacity of more than 75 m3 and total vapour pressure (TVP) of more than 76 kpa should have fixed roof with vapour control system.(5)Requirement for seals in Floating Roof Tanks-(i)(a)Internal Floating Roof Tank (IFRT) and External Floating Roof Tank (EFRT) shall be provided double seals with minimum vapour recovery of 96%.(b)Primary seal shall be liquid or shoe mounted for EFRT and vapour mounted for IFRT. Maximum seal gap width will be 4 cm and maximum gap area will be 200 cm2/m of tank diameter.(c)Secondary seal shall be rim mounted. Maximum seal gap width will be 1.3 cm and maximum gap area will be 20 cm2/m of tank diameter.(d)Material of seal and construction shall ensure high performance and durability.(ii)Fixed roof tanks shall have vapour control efficiency of 95% and vapour balancing efficiency of 90%.(iii)(a)inspection and maintenance of storage tanks shall be carried out under strict control;(b)for the inspection, API RP 575 may be adopted;(c)In-service inspection with regard seal gap should be carried out once in every six months and repair to be implemented in short time; and(d)the possibility of on-stream repair of both shall be examined.(iv)Storage tanks shall be painted with white colour shade, except for derogation of visually sensitive area.D. Storage of Benzene, VCM and ACND. Storage of Benzene, VCM and ACN(i)FRT with vapour for incineration with 99.9% of removal efficiency for volatile organic compounds (VOC) shall be provided; or(ii)IFRT/EFRT with double seals, emission-reducing roof fitting and fitted with fixed roof with vapour removal efficiency of at least 99% shall be provided; or(iii)Internal floating roof and nitrogen blanketing in between fixed and floating roofs shall be provided.

(Emission controlfor Road tank, truck/Rail tank, wagon loading)			
	Loading ofVolatile Products	Naphtha:(i)VOC reduction,%or(ii) Emission, gm/m3	(i) _99.5or(ii) _ 5
Benzene andButadience:(i) VOC reduction,%or(ii) Emission, mg/m3	(i) _99.99or(ii) _ 20		
Toluene/Xylene:(VOC)reduction,%or(ii) Emission, mg/m3	(i) _99.98or(ii) _ 150		

] [Inserted by Notification No. G.S.R. 820 (E) dated 9.11.2012 (w.e.f. 19.11.1986)][***] [Serial number 39 omitted by G.S.R. 512(E), dated 9-7-2009 (w.e.f. 9-7-2009).][

Sr.No.	Industry	Parameter	Standards
1	2	3	4
39	HotelIndustry	EffluentStandards	
(i) Hotel with atleast 20 bedrooms	limiting concentration in mg/1, except for pH	Inland Surface Water	On land for Irrigation

pH	5.5-9.0	5.5-9.0
BOD3days, 270C	30	100
Total Suspended Solids	50	100
Oil Grease	10	10
Phosphate as P	1	-
(ii) Hotel with less than 20 bedrooms or aBanquet Hall with minimum floor area of 100 m2or a Restaurantwith minimum seating capacity of 36		
pH	5.5-9.0	5.5-9.0
BOD3days, 270C	100	100
Total Suspended Solids	100	100
Oil Grease	10	10
Notes:i. Hotels, banquethalls, restaurants, etc. located in coastal area shall alsocomply with the provisions of the Coastal Regulation Zone, asapplicableii. If, the effluentis discharged into a municipal sewer leading to a SewageTreatment Plant, the hotel or restaurant or banquet hall, as thecase may be, shall provide a proper Oil and Grease Trap foreffluent arising from its kitchen and laundry and shall have tocomply with the 'General Standards for Discharge of EnvironmentalPollutants Part-A: Effluents' notified under Schedule-VI		

] [Inserted by Notification No. G.S.R. 794 (E) dated 4.11.2009 (w.e.f. 19.11.1986)]

Prior to its omission, serial number 39 reads a under :-{|

"39. Pharmaceutical Manufacturing and Formulation Industry	Effluents	
	1. pH	5.5-9.0
	2. Oil and Grease	10
	3. Total Suspended solids	100
	4. [BOD (3 days at 27°C)]	30
	5. Bio-assay test	90% survival of fish after 96 hrs. in 100% effluent
	6. Mercury	0.01
	7. Arsenic Chromium	0.20
	8. Chromium	0.10

(Hexavalent)	
9. Lead	0.10
10. Cyanide	0.10
11. Phenolics (as C6H5OH)	1.00
12. Sulphides (as S)	2.00
13. Phosphates (as P)	5.00

Note.- (1) Parameters listed as 1 to 13 are compulsory for formulators. However, the remaining parameters (6 to 13) will be optional for others.|}

S.No.	Industry	Parameter	Standard
(1)	(2)	(3)	(4)
		A.Emission Standards	
40	Pesticide Industry		Limitingconcentration in mg/Nm3
HCI	20		
Cl2	5		
H2S	5		
P2O5as H3PO4	10		
NH3	30		
Pesticidescompounds in the form of particulate matter	20		
CH3CI	20		
HBr	5		
B.Effluent Standards			
	Limitingconcentration in mg/l, except for pH and Bioassay test		
(i)Compulsory Parameters			
pH	6.5-8.5		
BOD, 3 days, 27°C	Formulation unit	30	
Technical graedunit	100		
Oiland Grease	10		
SuspendedSolids	100		
BioassayTest	90percent survival of fish after 96 hours in 100% effluent*		
(ii)Additional Parameters			
Arsenic(as As)	0.2		

Copper	1.0
Manganese	1.0
Mercury	0.01
Antimony(as Sb)	0.1
Zinc	1.0
Nickel, etc.(heavy metals individually)	Shall not exceedindividually 5 times the drinking water standards as per Bureauof Indian Standards
Cyanide(as CN)	0.2
Nitrate(as NO3)	50
Phosphate(as P)	5.0
Phenoland Phenolic Compounds as C6H5OH	1.0
Sulphur	0.03
BenzeneHexachloride (BHC)	0.01
Carbonyl	0.01
CopperOxychloride	9.6
DDT	0.01
Dimethoate	0.45
24D	0.4
Endosulfan	0.01
Fenitothrion	0.01
Malathion	0.01
Methylparathion	0.01
Paraquat	2.3
Phenathoate	0.01
Phorate	0.01
Proponil	7.3
Pyrethrums	0.01
Ziram	1.0
OtherPesticide (individually)	0.10

*Bioassay Testshall be carried out as per IS: (6582-1971).Note:1.The concerned State Pollution Control Board/Pollution ControlCommittee shall prescribe limits of Total Dissolved Solids (TDS),Sulphates and Chlorides depending on the usages of

recipientwater body in down stream, in which effluent shall be disposedoff.2. No limit for chemical Oxygen Demand (COD) isprescribed but, COD in the treated effluent shall be monitored.If COD is persistently reported more than 250 mg/l, theindustrial units discharging such an effluent shall be requiredto identify chemical causing the same. In case, these are foundto be toxic, as defined in Schedule I of the Manufacture, Storageand Import of Hazardous Chemicals Rules, 1989, the concernedState Pollution Control Board/Pollution Control Committee in suchcases shall direct the industries to install tertiary treatmentsystem by 31st MArch, 2012.3. Parameters listed as"Additional parameters" shall be prescribed dependingupon the process and product, on a case basis.

C.Emission Standards for Incinerator

	Limitingconcentration in mg/Nm3, unless stated	Sampling Durationin minutes, unless stated	
ParticulateMatter	50	30 or more (forsampling of 300 litres of emission)	
HCI	50	30	
SO2	200	30	
CO	100	Dailyaverage	
Totalorganic Carbon	20	30	
Total Dioxins andFurans*	ExistingIncinerator	0.2ng TEQ//Nm3	8hours
	New Incinerator	0.1ng TEQ/NM3	8hours
Sb+As+Pb+Cr+Co+Cu+Mn+Ni+Vand their compounds	1.5	2hours	

*The existingplant shall comply with norms for Dioxins and Furans as 0.1 ngTEQ/Nm3 by 18th August, 2013.Note :i. Allmonitored values shall be corrected to 11% oxygen on drybasis.ii. The CO2 concentration in tail gas shall not be

lessthan 7%. iii. In case, halogenated organic waste is less than 1%by weight in input waste, all the facilities in single chamberincinerators shall be designed so as to achieve a minimumtemperature of 1100°C in the incinerator. For fluidized bedtechnology based incinerator, temperature shall be maintained at950°C.iv. In case, halogenated organic waste is less than1% by weight in input waste, waste shall be incinerated only intwin chamber incinerators and all the facilities shall bedesigned to achieve a minimum temperature of 850±25°Cin primary chamber and 1100°C in secondary combustion chamberwith a gas residence time in secondary combustion chamber notless than two seconds.v. Scrubber meant for scrubbingemissions shall not be used as quencher. vi. Incineration plantsshall be operated (combustion chambers) with such temperature,retention time and turbulence, as to achieve Total Organic Carbon(TOC) content in the incineration ash and residue less than 3%,and their loss on ignition is less than 5% of the dry weight. Incase of non-conformity, ash and residue as the case may be, shalbe re-incinerated.vii. The incinerator shall have a chimneyof atleast thirty metres height.

D.Effluent from Incinerator

Note:(i)Stormwater shall not be allowed to mix with scrubber water and/orfloor washings.(ii) Stormwater shall be channelized throughseparate drains passing through a HDPE lined pit having holdingcapacity of 10 minutes (hourly average) of rainfull.

E.Stormwater

Note:(i)Stormwater shall not be allowed to mix with scrubber water and/orfloor washings.(ii) Stormwater shall be channelized throughseparate drains passing through a HDPE lined pit having holdingcapacity of 10 minutes (hourly average) of rainfall.

Substituted by Notification No. G.S.R. 446(E) dated 13.6.2011 (w.e.f. 19.11.1986)

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40. Pesticide manufacturing and Formulation Industry	Effluents	
	1. Temperature	Shall not exceed 5°C above the receiving water temperature
	2. pH	6.5-8.5
	3. Oil Grease	10
	4.[BOD (3 days at 27°C)] [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	30
	5. Total suspended solids	100
	6. Bio-assay test	90% survival of fish after 96% hrs. in 100% effluent
	7.(a) Specific Pesticides:	
	Benzene hexachloride	10
	Carbonyl	10
	DDT	10
	Endosulfan	10
	Diamethoate	450
	Fenitrothion	10
	Malathion	10
	PhorateMethyl	10
	Parathion	10
	Phenthoate	10
	Pyrethrums	10
	Copper Oxychloride	9600
	Copper Sulphate	50
	Ziram	1000
	Sulphur	30
	Paraquat	2300
	Proponil	7300
	Nitrogen	780
	(b) Heavy Metals:	
	Copper	1.00
	Manganese	1.00
	Zinc	1.00

Mercury	0.01
Tin	0.10
Any other metal1ike	Shall not exceed 5
Nickel, etc.	Times the drinking water standards of BIS

(2)State Board may prescribed limit for chemical oxygen demand (COD) correlated with BOD limit.(3)State Board may prescribe limit for total dissolved solids depending upon uses of recipient waterbody.(4)Limits should be complied with at the terminal of the treatment unit before letting out of the factory boundary limits.(5)For the compliance of limits, analysis should be done in the composite sample collected every hour for a period of 8 hours.

(c) Organics	
Phenol and phenolic compound as C_6H_5OH	1.0
(d) Inorganics :	
Arsenics(as As)	0.2
Cyanide (as CN)	0.2
Nitrate(as NO_3)	50.0
Phosphate(as P)	5.0
[Emissions] [Inserted by G.S.R. 46(E), dated 3-2-2006 (w.e.f. 3-2-2006).]	Not to exceed mg/NM^3
HCL	20
Cl_2	5
H_2S	5
P_2O_5(as H_3PO_4)	10
NH_3	30
Particulate matter with pesticides compounds	20
CH_3Cl	20
HBr	5]

Note.- 1. Limits should be complied with at the end of the treatment plant before any dilution.

2. Bio-assay test should be carried out with available species of fish in receiving water.

3. State Boards may prescribe limits of total dissolved solids (TDS) sulphates and chlorides depending on the use of recipient water body.

4. State Board may prescibe COD limit correlated with BOD limit.

5. Pesticides are known to have metabolites and isomers. If they are found in significant concentration, standards may be prescribed for those in the list by Central or State Board.

6. Industries are required to analyse pesticides in waste-water by advanced analytical method such as GLC/HPLC.

7. All the parameters will be compulsory for formulators, for others, the 7th will be optional.

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41. Tannery (after primary treatment) Disposal: Channel/Conduit Carrying waste-waters to Secondary treatment plants Type of Tanneries -Chrome tanneries/combined chrome and vegetable tanneries	Effluents	
	pH	6.5-9.0
	SS	Not to exceed 600
	Chromium concentration after treatment in the chrome waste-water stream	45
-Vegetable tanneries	pH	6.5-9.0
	SS	Not to exceed 600

Note. - The above standards will apply to those tannery units which have made full contribution to a Common Effluent Treatment Plant(CETP) Comprising secondary treatment. Those who have not contributed will be governed by earlier Notification No. S.O. 64(E), dated January 18,1988:

42. Paint Industry (Waste-water discharge)	Effluents	
	pH	6.0-8.5
	Suspected Solids	100
	[BOD (3 days at 27°C)] [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	50
	Phenolics as C6H5OH	1.0
	Oil Grease	10.0

	Bio-assay test	90% survival in 96 hours
	Lead as Pb	0.1
	Chromium as Cr.	0.1
	Hexavalent	
	Total	2.0
	Copper as Cu	2.0
	Nickel as Ni	2.0
	Zinc as Zn	5.0
	Total heavy metals	7.0
43. Inorganic Chemical Industry(Waste-Water discharge) Part I (metal compounds of Chromium, Manganese, Nickel, Lead and Mercury)	Effluents	
	pH	6.0-8.5
	Chromium as Cr	
	Hexavalent	0.1
	Total	2.0
	Manganese as Mn	2.0
	Nickel as Ni	2.0
	Copper as Cu	2.0
	Zinc as Zn	5.0
	Cadmium as Cd	0.2
	Lead as Pb	0.1
	Mercury as Hg	0.01
	Cyanide as CN	0.2
	Oil Grease	10.0
	Suspended solids	30.0
Note. - In addition to the above, total heavy metals are to be limited to 7mg/l.		
44. Bullion Refining (Waste-water discharge)	Effluents	
	pH	6.5-8.5
	Cyanide as CN	0.2
	Sulphide as S	0.2
	Nitrate as N	10.0
	FreeCl2as Cl	1.0
	Zinc as Zn	5.0
	Copper as Cu	2.0

	Nickel as Ni	2.0
	Arsenic as As	0.1
	Cadmium as Cd	0.2
	Oil and Grease	10.0
	Suspended Solids	100
[* * *] [Omitted by Notification No. G.S.R. 485 (E) dated 9.6.2010 (w.e.f. 19.11.1986)]	[* * *] [Omitted by Notification No. G.S.R. 485 (E) dated 9.6.2010 (w.e.f. 19.11.1986)]	
	[* * *] [Omitted by Notification No. G.S.R. 485 (E) dated 9.6.2010 (w.e.f. 19.11.1986)]	[* * *] [Omitted by Notification No. G.S.R. 485 (E) dated 9.6.2010 (w.e.f. 19.11.1986)]
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Sl. No.	Category	Standards, Db (A)
1	2	3
46.	Noise Limits for Automobiles (Free Field at one meter in dB(A) at the Manufacturing Stage) to be Achieved by the Year 1992.	
	(a) Motorcycle, Scooters Three Wheelers	80

	(b) Passenger Cars	82
	(c) Passenger or Commercial Vehicles upto 4 MT	85
	(d) Passenger or Commercial Vehicles above 4 MT and upto 12 MT	89
	(e) Passenger or Commercial Vehicles exceeding 12 MT	91
47.	Domestic Appliances and Construction Equipments at the manufacturing Stage to be achieved by the Year, 1993	
	(a) Window Air Conditioners of 1 ton to 1.5 ton	68
	(b) Air Coolers	60
	(c) Refrigerators	46
	[***] [Item (d) omitted by G.S.R. 371(E), dated 17-5-2002 (w.e.f. 17-5-2002).]	
	(e) Compactors (rollers) Front loaders, Concrete mixers, Cranes (movable), Vibrators and Saws.	75]

Sl. No.	Industry	Parameter	Standards
1	2	3	4
48. [] [Inserted by G.S.R. 93(E), dated 21-2-1991 (w.e.f. 27-2-1991)]	GlassIndustry	Emissions	
A.	SodalimeBorosilicate and other special Glass (other than Lead)		
(a) Furnace:			
Capacity			
(i) Upto aproduct draw capacity of 60 MT/Day	Particulatematter	2.0 kg/hr.	
(ii) Productdraw capacity more than 60 MT/Day	Particulatematter	0.8 kg./Mt.of product drawn	
(iii) For allcapacities emission and H is stack height in metres.	Stack height	H=14(Q)0.3where Q is the rate of SO2in Kg/hr.	
	Totalfluorides	5.0 mg/NM3	
	NOX	Use of lownox burners in new plants.	
(b)Implementation of the following measures for fugitive emissioncontrol from other sections :-			
(i) Rawmaterials should be transported in leak proof containers.			
(ii) Culletpreparation should be dust-free using water spraying.			

(iii) Batchpreparation section should be covered.		
B.	Lead Glass	
(a) Furnace:		
Allcapacities	Particulatematter	50 mg/NM3
	Lead	20 mg/NM3
(b)Implementation of the following measures for fugitive emissioncontrol from other sections :-		
(i) Batchmixing, proportioning section and transfer points should becovered and it should be connected to control equipments to meetthe following standards:		
	Particulatematter	50 mg/NM3
	Lead	20 mg/NM3
(ii) MinimumStack height should be 30 metres in lead glass units.		
(c) PotFurnace at Firozabad		
Furnace :	Particulatematter	1200 mg/NM3
Note :-Depending upon local' environmental conditions, State/ CentralPollution Control Board can Particulate matter prescribe morestringent standards than those prescribed above.		
C.	GlassIndustry (For all categories)	Effluents
	pH	6.5-8.5
	TotalSuspended solids	100 mg/l
	OilGrease	10 mg/l
49	Lime Kiln	Stack height
Capacity:-	Stack height	
Upto 5T/day		A Hood shouldbe provided with a stack of 30 meter height from ground level(including kiln height).

Above 5T/day	Stack height	H=14 (Q)0.3Where Q is emission rate of SO2in kg/hr. and H isStack Height in meters.	
More than5T/day And upto40T/day	Particulatematter	500 mg/NM3	
Above 40T/day	Particulatematter	150 mg/NM3	
[50 [Substituted by Notification No. G.S.R. 1016(E), dated 28.10.2016 (w.e.f. 19.11.1986).]	A.Slaughterhouses or Meat ProcessingUnits or Both*	Effluents	MaximumConcentrati values are in mg/l exceptfor pH
pH	6.5 to 8.5		
Bio-chemicalOxygen Demand(BOD) [3 daysat 27°C]	30		
ChemicalOxygen Demand(COD)	250		
SuspendedSolids	50		
Oil andGrease	10		
B.Sea FoodIndustry*	Bio-chemicalOxygen Demand(BOD) [3 daysat 27°C]	30	
SuspendedSolids	50		
Oil andGrease	10		
*Theemission standards from Boiler House of Slaughterhouses or MeatProcessing Units or both and Sea Food Industry shall conform tothe standards prescribed vide notification No. G.S.R. 742 (E),dated 30.08.1990 as amended from time to time under theEnvironment (Protection) Act, 1986.Note:(i)For Slaughterhouses operating in local bodies/ municipalities,where the treated effluent is discharged into municipal sewersleading to full-fledged Sewage Treatment Plant, the BOD may berelaxed to 100mg/l.(ii)All Slaughterhouses/ meat processing units shall ensure safe andproper disposal of solid waste {Type I (Vegetable matter such asrumen, stomach and intestinal contents, dung,			

agricultureresidues etc) and Type II (Animal matter such as inedible offal,tissues, meat trimmings, waste and condemned meat, bones etc.)}through suitable technology approved by SPCBs/ PCCs.]

Note :-(i) TLWK-Total Live Weight Killed. (ii) In case of disposal into municipal sewer where sewage is treated the industries shall install screen and oil grease separation unitS. (iii) The industires having slaughter house along with meat processing units will be considered in meat processing category as far as standards are concerned.*The emission standards from Boiler House shall conform to the standards already prescribed under Environment (Protection) Act, 1986 vide Notification No. G.S.R. 742 (E), dated 30th August, 1990.

Sl. No.	Industry	Parameter	Standards	
1	2	3	4	
51.	*Food and Fruit Processing Industry:	Effluents	Concentration not to exceed mg/1except pH	Quantum gm/MT of product
	Category :			
A.	Soft Drinks			
	(a) Fruit based/Synthetic(More than 0.4 MT/Day) bottles and tetra pack			
		pH	6.5-8.5	-
		Suspended solids	100	
		Oil and grease	10	
		[BOD (3 days at 27°C)] [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	30	
	(b) Synthetic (Less than 0.4 MT/Day)		Disposal via septic tank	-
B.	FruitVegetables			
	(a) Above 0.4 MT/Day	pH	6.5-8.5	-
		Suspended solids	50	
		Oil and grease	10	
		[BOD (3 days at 27°C)]	30	
	(b) 0.1-0.4 MT/Day		Disposal via septic tank	-
	(10 MT/Yr)			

C.	Bakery			
	(a) Bread and Biscuit			
	(i) Continuous process			
	(more than 20T/Day)	pH	6.5-8.5	
		[BOD (3 days at 27°C)]	200	25
	(ii) Non-continuous process (less than 20MT/Day)		Disposal via septic tank	
	(b) Biscuit Production			
	(i)10 T/Day above	pH	6.5-8.5	
		[BOD (3 days at 27°C)] [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	300	35
	(ii) Below 10T/Day		Disposal via septic tank	
D.	Confectioneries	Effluents		
	(a) 4 T/Day and above	pH	6.5-8.5	
		Suspended solids	50	
		Oil and grease	10	
		[BOD (3 days at 27°C)]	30	
	(b) Below 4 T/Day		Disposal via septic tank	

Note. - To asecrtain the category of "unit fails" the average of daily production and waste-water discharge for the preceding 30 operating days from the date of sampling shall be considered.*The emission from the Boiler House shall conform to the standards already prescribed undcr Environment (Protection) Act, 1986 vide Nolification NO. G.S.R. 742(E), dated 30th August, 1990.

Sl. No.	Industry	Parameter	Standards
1	2	3	4
52.	*Jute Processing Industry:	Effluents	Concentration in mg/1except pH and water consumption.
		pH	5.5-9.0
		[BOD (3 days at 27°C)]	30
		Suspended solids	100
		Oil and grease	10
		Water consumption	1.60 Cum/Ton of product produced.

Note. - 1. Water Consumption for the jute processing industry will be 1.5 Cum/Ton of product from January, 1992.

2. At the present no limit for colour is given for liquid effluent. However, as far as possible colour should be removed.

*Stack emissions from boiler house shall conform to the standards already prescribed under Environment (Protection) Act, 1986 vide Notification-No. GSR 742(E), dated 30th August, 1990.

53. Large Pulp Paper/News Print/Rayon Grade Plants of[Capacity above 24,000 MT per annum] [Substituted by G.S.R. 546(E), dated 30-8-2005 (w.e.f. 30-8-2005).]	Effluents	Concentration in mg/1except pH and TOCL
	pH	7.0-8.5
	[BOD (3 days at 27°C)]	30
	COD	350
	Suspended solids	50
	[Absorbable Organic Halogens (AOX) in effluent discharge [Substituted by G.S.R. 546(E), dated 30-8-2005 (w.e.f. 30-8-2005).]	1.5kg/ton of product with effect from the date of publication of this notification 1.0 kg/ton of product with effect from the 1stday of March, 2008]
	Flow (Total waste-water discharge)	
	**(i) Large pulp and paper	200 Cum/Ton of paper produced
	(ii) Large rayon grade/News Print	150 Cum/Ton of paper produced

*The Standards for Total Organic Chloride (TOCL) will be applicable from January, 1992.**The Standards with respect of total waste-water discharge for the large pulp and paper mills be established from 1992, will meet the standards of 100 Cum/Ton of paper produced.

54. Small Pulp and Paper, Paper Plant of Capacity upto 24,000 MT/Annum:	Effluents	
Category :		
A.* Agro-based	Total Waste-water discharge	200 Cum/Ton of paper produced
B. **Waste-paper based	-do-	75 Cum/Ton of paper produced

*The agro-based mills to be established from January, 1992 will meet the standards of 150 cum/Ton of paper produced.**The waste-paper mills to be established from January, 1992 will meet the standards of 50 cum/Ton of paper produced.

55. Common Effluent Treatment Plants:	Effluents	
A. Primary Treatment	(Inlet effluent quality for CETP)	(Concentration in mg/1)
	pH	5.5-9.0
	Temperature °C	45
	Oil Grease	20
	Phenolic Compounds (as C6H5OH)	5.0
	Ammonical Nitrogen (as N)	50
	Cyanide (as CN)	20
	Chromium hexavalent (as Cr+6)	2.0
	Chromium (total) (as Cr)	2.0
	Copper (as Cu)	3.0
	Lead (as Pb)	1.0
	Nickel (as Ni)	3.0
	Zinc (as Zn)	15
	Arsenic (as As)	0.2
	Mercury (as Hg)	0.01
	Cadmium (as Cd)	1.0
	Selenium (as Se)	0.05
	Fluoride (as F)	15
	Boron (as B)	2.0
	Radioactive Materials	
	Alpha emitters, c/ml	10-7
	Beta emitters, c/ml	10-8

Note.- 1. These standards apply to the small scale industries, i.e., total discharge upto 25 KL/Day.

2. For each CETP and its constituent units, the State Board will prescribe standards as the local needs and conditions; these can be more stringent than those prescribed above. However, in case of clusters of units, the State Boards with the concurrence of CPCB in writing may prescribe suitable limits.

		Into inland surface waters	On land for Irrigation	Into Marine Coastal areas
		(a)	(b)	(c)
B. Treated Effluent Quality of common effluent treatment plant		Concentration in mg/l except pH and Temperature		
	pH	5.5-9.0	5.5-9.0	5.5-9.0
	[BOD (3 days at 27°C)]	30	100	100
	Oil Grease	10	10	[10] [Substituted for the words "20" by Notification No. G.S.R. 739 (E) dated 9.9.2010 (w.e.f. 19.11.1986)]
	Temperature	Shall not exceed 40°C in any Section of the stream within 15 metres downstream from the effluent outlet.	45°C at the point of discharge	

Suspended solids		100	200	(a) For process waste-waters 100 (b) For cooling water effluents 10 per cent. above totalsuspended matter of in effluent cooling water
	Dissolved Solids (Inorganic)	2100	2100	-
	Total residual chlorine	1.0	-	1.0
	Ammonical nitrogen (as N)	50	-	50
	Total Kjeldahl Nitrogen (as N)	100	-	100
	Chemical Oxygen Demand	250	-	250
	Arsenic (as As)	0.2	0.2	0.2
	Mercury (as Hg)	0.01	-	0.01
	Lead (as Pb)	0.1	-	1.0
	Cadmium (as Cd)	1.0	-	2.0
	Total Chromium (as Cr)	2.0	-	2.0
	Copper (as Cu)	3.0	-	3.0
	Zinc (as Zn)	5.0	-	15
	Selenium (as Se)	0.05	-	0.05
	Nickel (as Ni)	3.0	-	5.0
	Boron (as B)	2.0	2.0	-
	Percent Sodium	-	60	-
		0.2	0.2	0.2

	Cyanide (as CN)			
	Chloride (as CI)	1000	600	-
	Fluoride (as F)	2.0	-	15
	Sulphate (as S04)	1000	1000	-
	Sulphide (as S)	2.8	-	5.0
	Pesticides	Absent	Absent	Absent
	Phenolic compounds C6H5OH	1.0	-	5.0

Note.- All efforts should be made to remove colour and unpleasant odour as far as possible.]

56. Dairy	Effluents	Concentration in mg/1, except pH	Quantum per product processed
	pH	6.5-8.5	-
	*[BOD (3 days at 27°C)]	100	-
	**Suspended Solids	150	-
	Oil and Grease	10	-
	Waste-water generation	-	3m3/kl of milk

Note.- *BOD may be made stringent upto 30 mg/l if the recipient fresh water body is a source for drinking water supply. BOD shall be upto 350 mg/l for the chilling plant effluent for applying on land provided the land is designed and operated as a secondary treatment system with suitable monitoring facilities. The drainage water from the

land after secondary treatment has to satisfy a limit of 30 mg/l of BOD and 10 mg/l of nitrate expressed as "N". The net addition to the groundwater quality should not be more than 3 mg/l of BOD and 3 mg/l of nitrate expressed as "N". This limit for applying on land is allowed subject to the availability of adequate land for discharge under the control of the industry, BOD value is relaxable upto 350 mg/l, provided the waste-water is discharged into a town sewer leading to secondary treatment of the sewage.

** Suspended solids limit is relaxable upto 450 mg/l, provided the waste-water is discharged into town sewer leading to secondary treatment of the sewage.

57. Tanneries Effluents	Effluents	Concentration in mg/1, except pH	Quantum per raw hide processed
	pH	6.5-9.0	
	[BOD (3 days at 27°C)]	100	
	Suspended Solids	100	-
	Sulphides (as S)	1	-
	Total Chromium (as Cr)	2	-
	Oil and Grease	10	-
	Waste-water	-	28m3/T

	generation				
*For effluent discharge into inland surface waters BOD limit shall be made stricter to 30 mg/l by the concerned State Pollution Control Board.					
58.[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]		[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]		
		[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]
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	(E) dated 18.3.2011]	dated 18.3.2011]	No. G.S.R. 221 (E) dated 18.3.2011]	(E) dated 18.3.2011]	No. G.S.R. 221 (E) dated 18.3.2011]
	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]	[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]
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59. [Agriculture residue fired Boilers (including bagasse)] [Substituted by Notification No. G.S.R. 647 (E) dated 13.9.2002 (w.e.f. 19.11.1986)]	Emissions	(Concentration in mg/1)			

(a) Step grate	Particulate matter	250
(b) Horse shoe/pulsating grate	Particulate matter	500(12% CO_2)
(c) Spreader stroker	Particulate matter	800(12% CO_2)
Note.- In the case of horse shoe and spreader stroker boilers, if more than one boiler is attached to a single stack, the Standard shall be fixcd based on added capacity of all the boilers connected with the stack.		
60. Man-made fibre industry(Semi-Synthetic).	Effluent	Concentration in mg/1 except for pH
	pH	5.5-9.0
	Suspended Solids	100
	[BOD (3 days at 27°C)]	30
	Zinc (as Zn)	1
61. Ceramic Industry	Emissions	(Concentration in mg/Nm3)
A. Kilns		
(a) Tunnel, Top Hat, Chamber	Particulate matter	150
	Flouride	10
	Chloride	100
	Sulphurdioxide	**
(b) Down-draft	Particulate matter	1200
	Fluoride	10
	Chloride	100
	Sulphurdioxide	**
(c) Shuttle	Particulate matter	250
	Flouride	10

	Chloride	100
	Sulphurdioxide	**
(d) Vertical shaft Kiln	Particulate matter	250
	Flouride	10
	Sulphurdioxide	**
(e) Tank furnace	Particulate matter	150
	Flouride	10
	Sulphurdioxide	**
B. Raw Material handling, Processing and operations		
(a) Dry raw material handling and processing operations	Particulate matter	150
(b) Basic raw materials and processing operations	Particulate matter	*
(c) Other sources of air pollution generation	Particulate matter	*
C. Automatic spray unit		
(a) Drayers		
(i) Fuel fired dryers	Particulate matter	150
(ii) For heat recovery dryers	Particulate matter	*
(b) Mechanical finishing operation	Particulate matter	*
(c) Lime/plaster ofParismanufacture	Particulate matter	*
Capacity	Stack height	
Upto 5T/day	-do-	A. Hood should be provided with a stack of 30 metre height from ground level (including kiln height)
Above 5T/day	-do-	H=14(Q)0.3Where Q is emission rate of SO2in/kg/hr

		and H is Stack height in metres
More than 5T/day and upto 40T/day	Particulate matter	500 mg/Nm3
	-do-	150 mg/Nm3

Note. - Oxygen reference level for particulate matter concentration calculations for Kilns mentioned at A(c) is 18% and for those at A(b), A(d), and A(e) is 8%.*All possible preventive measures should be taken to control pollution as far as practicable.**The standard for sulphur dioxide in terms of stack height limits for kilns with various capacities of coal consumption shall be as indicated below :-

Coal Consumed per day	Stack Height
Less than 8.5 mt.	9 m.
More than 8.5 to 21 mt.	12 m.
More than 21 to 42 mt.	15 m.
More than 42 to 64 mt.	18 m.
More than 64 to 104 mt.	21 m.
More than 104 to 105 mt.	24 m.
More than 105 to 126 mt.	27 m.
More than 126 mt.	30 m. or using formula H-14 (Qg)0.3(whichever is more)

Note. - In this notification, H-Physical height of the stack Qg-Emission of sulphur dioxide in Kg/hr., MT-Metric tones m-meters.

62. [Viscose Filament Yarn (Sub-sector of man-made fibre semi-Synthetic Industry)] [Added by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]	Effluents	(Concentration In mg/l except for pH)
	pH	5.5-9.0
	Suspended solids	100
	[BOD(3 days at 27°C)] [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	30
	Zinc (as Zn)	5
63. [Starch Industry (Maize products)] [Inserted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	Effluents	Concentration not to exceed mg/l (except pH and waste-water discharge)
	pH	6.5-8.5
	BOD (3 days at 27°C)	100
	Suspended solids	150

	Waste-water discharge	8 m3/tonne of maize processed

Note. - The prescribed limits for BOD and suspended solids shall be made more stringent or less stringent depending upon the conditions and local requirements as mentiond below:-(i)BOD shall be made stringent upto 30 mg/l if the recipient fresh water body is a source for drinking water supply.(ii)BOD shall be allowed upto 350 mg/l for applying on land, provided the land is designed and operated as a secondary treatment system with the requisite monitoring facilities. The drainage water from the land after secondary treatment has to satisfy a limit of 30 mg/1 of BOD and 10 mg/l of nitrate expressed as "N". The net addition to ground water quality should not be more than 3 mg/l of BOD and 10 mg/l of nitrate expressed as "N".(iii)BOD shall be allowed upto 350 mg/1 fpr discharge into a town sewer, if sewer such leads to a secondary biological treatment system.(iv)Suspended solids shall be allowed upto 450 mg/1 for discharge into a town sewer, if such sewer leads to a secondary biological treatment system.(v)In the event of bulking of sludge, the industry shall immediately apprise the respective State Pollution Control Board.

64. Beehive hard coke oven	Emission:	150 mg/Nm3
(i) New unit	Particulate matter (corrected to 6%CO2)	
	Hydrocarbons	25 ppm
(ii) Existing units	Particulate matter (corrected to 6%CO2)	350 mg/Nm3

Note. - For control of emissions and proper dispensation of pollutants the following guidelines shall be followed:-(i)Units set up after the publication of this notification shall be treated as new units.(ii)A minimum stack height of 20 meters shall be provide by each unit.(iii)Emissions from coke ovens shall be channelised through a tunnel and finally emitted through a stack. Damper adjustment techniques shall be used to have optimum heat utilisation and also to control the emission of unburnt carbon particles and combustible flue gases.(iv)Wet scrubbing system or waste heat utilisation for power generation or by-product recovery systems should be installed preferably to achieve the prescribed standards.(v)After four years from the date of this notification, all the existing units shall comply with the standards prescribed for the new units.

65. Briquette Industry (Coal)	Emission:	
(a) Units having capacity less than 10tonnes.	Particulate matter (corrected to 6%CO2)	350 mg/Nm3
(b) Units having capacity 10 tonnes or more.	Particulate matter (corrected to 6%CO2)	150 mg/Nm3

Note. - For control of emissions/and proper dispersal of pollutants, the following guidelines shall be followed by the industry :-(i)A minimum stack height of 20 metres shall be provided.(ii)All ovens shall be modified to single chimney multi-oven systems.(iii)Emissions from ovens shall be channelised through in-built draft stack. Optimum heat utilization shall be used.(iv)In case of units having capacity 10 tonnes and above, wet scrubbing system shall be provided to control air pollution.

66.Soft Coke Industry	Particulate matter (corrected to 6% CO2)	350mg/Nm3

Note. - Wet scrubbing systems alongwith by-product recovery system shall be provided.Guidelines for Emission Control to Improve Work Zone Environment (applicable for industries at serial

numbers 64, 65 and 66):(a)Water used for quenching and wet scrubbing shall be recirculated and reused through catch-pits.(b)Leakages in the oven shall be sealed by bentonite or by any suitable paste and by proper maintenance to avoid fugitive emission.Guidelines for Coal Handling and Crushing Plant (applicable to industries at Serial Numbers 64,65 and 66):(a)Unloading of coal trucks shall be carried out with proper care avoiding dropping of the materials from height. It is advisable to moist the material by sprinkling water while unloading.(b)Pulverisation of coal shall be carried out in an enclosed place and water sprinkling arrangement shall be provided at coal heaps, crushing area and on land around the crushing unit.(c)Work area surrounding the plant shall be asphalted or concreted.(d)Green belt shall be developed along the boundary of the industry.(e)Open burning of coal to manufacture soft coke shall be stopped.

67. Edible Oil Vanaspati Industry	Effluents	
	Temperature	Not more than 5°C above ambient temperature of the recipient water body.
	pH	6.5-8.5
	Suspended solids	150 mg/l
	Oil and grease	20 mg/l
	BOD(3 days at 27°C)	100 mg/l
	COD	200 mg/l
	Waste-water discharge	
	(i) Solvent extraction	2.0 cum/tonne of product (oil)
	(ii) Refinery/Vanaspati(refined oil Vanaspati)	2.0 cum/tonne of product
	(iii) Integrated unit of solvent extraction and refinery/vanaspati	4.0 cum/tonne of refined oil/vanaspati produced
	(iv) Barometric cooling water/De-odoriser water	15.0 cum/tonne of refined oil/vanaspati

Note. - (i) The above standards shall be apllicable to waste-water from processes and cooling.(ii)BOD shall be made stringent upto 30 mg/l if the recipient fresh water body is source of drinking water supply.(iii)The standards for boiler emissions shall be applicable as prescribed under Schedule I of these rules.[

Sl.No.	Industry	Parameter	Standard
(1)	(2)	(3)	(4)
68.	Organic Chemicals Manufacturing Industry	A. Effluent Standards	
			Limiting concentration in mg/1, except for

	pH and Bioassaytest
	Compulsory parameters
pH	6.5-8.5
BOD 3 days, 27°C	100
Oil Grease	10
Bioassay test +	Minimum 90% survival after 96 hours in 100%effluent
	Additional parameters
Nitrate (as N)	10
Arsenic (as As)	0.2
Chromium Total	1.0
Lead (as pb)	0.1
Cyanide (as CN)	0.2
Zinc (as Zn)	5.0
Mercury (as Hg)	0.01
Copper (as Hg)	2.0
Nickel (as Nil)	2.0
Phenolics (as C6 H5 OH)	5.0
Sulphide	2.0

+ The Bioassay test shall be conducted as per IS: 6582+-1971

Note:(i) Industries covered underthis group include halo aliphatics, plasticizers, aromatics(alcohols, phenols, esters, acids and salts, aldehydes andketones), substituted aromatics, aliphatics (alcohols, esters,acids, aldehydes, ketones amines and amides) and detergents.(ii)Though norms for COD are not mentioned here but, COD shall bemonitored. If the COD in treated effluent exceeds 250 mg/1, theconcerned industrial units discharging such effluent shall berequired to identify chemicals responsible for high COD ineffluent shall be required to identify chemicals responsible forhigh COD in effluent. In case, these are found to be toxic asdefined under the

	Manufacture, Storage and Import of HazardousChemicals Rules, 1989, the concerned industry shall installtertiary treatment system.(iii) The above mentioned standardsshall not be applicable to small scale detergent formulatingunits.		
B. Emission Standards for Incinerator			
	Limiting concentration in mg/Nm3, unless otherwise stated	Sampling Duration in minutes unless otherwisestated	
	Particulate Matter	50	30 or more (for sampling about 300 litres ofemission)
	HCI	50	30
	SO2	200	30
	CO	100	daily average
	Total Organic Carbon	20	30
	Total Dioxins Existing and Furans* Incinerator-	0.2 ng TEQ/Nm3	8 hours
	New Incinerator	0.1 ng TEQ/Nm3	8 hours
	Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V+Cd+Th+Hg and their compounds	1.5	2 hours
	*The existing plant shall comply with norms forDioxins and Furans as 0.1 ng TEQ/Nm3 by 1st January, 2014.		
	Note:(i) All monitored values shallbe corrected to 11% oxygen on dry basis.(ii) The CO2concentration in tail gas shall not be less than 7%.(iii) Incase, halogenated organic waste is less than 1% by weight ininput waste all the facilities in twin chamber incinerator shallbe designated so as to achieve a minimum temperature of 850±25°in primary chamber		

	and 950°C in secondary combustion chamberand with a gas residence time in secondary combustion chamber notless than twoorall the facilities in single chamberincinerator for gaseous hazardous waste shall be designated so asto achieve a minimum temperature of 950° in the combustionchamber with a gas residence time not less than two seconds.(iv)In case halogenated organic waste is more than 1% by weight ininput waste, waste shall be incinerated only in twin chamberincinerators and all the facilities shall be designated toachieve a minimum temperature of 850±25° C in primarychamber and 1100°C in secondary combustion chamber with a gasresidence time in secondary combustion chamber not less than twoseconds.(v) Scrubber meant for scrubbing emissions shall notbe used as quencher.(vi) incineration plants shall beoperated (i.e. combustion chambers) with such temperature,retention time and turbulence, as to achieve Total Organic Carbon(TOC) content in the incineration ash and residue less than 3%and their loss on ignition is less than 5% of them weight. Incase of non-conformity, ash and residue, as the case may be shallbe re-incinerated.(vii) The incinerator shall have a chimneyof at least thirty meters height.
C. Effluent Standards for Incinerator	
	Note:(i) Effluent from scrubber (s)and floor washing shall flow through claosed conduit or pipenetwork and be treated to comply with the effluent standardsmention at 'A' above(ii) The built up in Total DissolvedSolids Solids (TDS) in waste water of floor washings shall notexceed 1000 mg/over and above the TDS of raw water used.
D. Storm	

water

Note:(i) Storm water shall not be allowed to mixwith scrubber water and/or floor washings.(ii) Storm watershall be channellized through separate drains passing through aHDPE lined pit having holding capacity of 10 minutes (hourlyaverage) of rainfall.

] [Substituted by Notification No. G.S.R. 608 (E) dated 21.7.2010 (w.e.f. 19.11.1986)]Substituted by Notification No. G.S.R. 608 (E) dated 21.7.2010 (w.e.f. 19.11.1986)

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68. Organic Chemicals manufacturing industry	Effluents	
(a) Compulsory parameters		
	pH	6.5-8.5
	BOD(3 days at 27°C)	100mg/l
	Oil and grease	10mg/l
	Bio-assay test	Minimum 90%survival after 96 hours with fish at 100% effluent)
(b) Additional parameters		(mg/1)
	Nitrate (as N)	10
	Arsenic	0.2
	HexavalentChromium	0.1
	Total Chromium	1.0
	Lead	0.1
	Cyanide as CN	0.2
	Zinc	0.5
	Mercury	0.01
	Copper	2.0
	Nickel	2.0
	Phenolicsas C6H5OH	5.0
	Sulphide	2.0

Note.- (i) No limit for COD is prescribed but it shall be monitored. If the COD in a treated effluent is persistently greater than 250 mg/l, such industrial units are required to identify chemicals causing the same. In case these are found to be toxic as defined in Hazardous Chemicals Rules,1989 in Part I of Schedule I, the State Boards in such cases may direct the industries to install tertiary treatment system stipulating time-limit. This may be done on case-to-case basis.(ii)These standards are not applicable to small-scale detergent (formulating units).(iii)The standards for boiler emissions shall be applicable as per the existing emission regulations.(iv)Industry covered under this group are halo-aliphatics, plasticizers, aromatics (alcohols, phenols, esters, acids and salts, aldehydes and ketone), substituted aromatics, aliphatic (alcohols, esters, acids, aldehydes, ketones, amines and

amides) and detergents.|}

Sl.No.	Industry	Parameter	Standards
(1)	(2)	(3)	(4)
69.	GrainProcessing, Flour Mills, Paddy Processing, Pulse Making orGrinding Mills	A-EmissionStandards	
	Capacity(tonne per hour)	LimitingConcentration in mg/Nm3	
1 to3	150		
Particular matter	Morethan 3	100	
Notes:-(i)All dust generating equipments or processes shall be providedwith dust extraction arrangement.(ii) The bag houses, etc.,shall be connected to chimneys/stacks of 12 metres height or atleast 02 metres above the top most point of the building or shedor plant in the industry.(iii) The unit shall channellse shopfloor/fugitive emissions through a stack of 12 metres height orat least 02 metres above the top most point of the building orshed or plant in the industry.			
B-EffluentStandards			
	Limitingvalue for concentration in mg/l except for pH		
	Inlandsurface water	Publicsewar	Landfor irrigation
pH	5.5-9.0	5.5-9.0	5.5-9.0
Suspended Solids	100	600	200
Oils and Grease	10	20	10
BOD 3 days at 27°C	30	350	100
COD	250	-	-
C-StormwaterStandards			
(I) Stormwater fora unit (having plot size atleast 250 square meters) shall not beallowed to mix with scrubber water, effluent and/or floorwashings.(ii) Stormwater			

	within the battery limits of a unitshall be channelized through separate drain/pipe passing througha HDPE lined pit having holding capacity of 10 minutes (hourlyaverage) of rainfall.	

Notes. - (i) BOD shall be made stringent upto 30 mg/l if the recipient fresh water body is a source for drinking water supply.(ii)BOD shall be allowed upto 350 mg/l for (applying on land, provided the land is designed and operated as a secondary treatment system with the requisite monitoring facilities. The drainage water from the land after secondary treatment has to satisfy a limit of 30 mg/l of BOD and 10 mg/l of nitrate expressed as "N". The net addition to ground water quality should not be more than 3 mg/l of BOD and 10 mg/l of nitrate expressed as "N".(iii)BOD shall be allowed upto 350 mg/l for discharge into a town sewer, if such sewer leads to a secondary biological treatment system.(iv)Suspended solids shall be allowed upto 450 mg/l for discharge into a town sewer, if such sewer leads to a secondary biological treatment system.

70. Boilers(Small)	Steam generation capacity (ton/hour)	Particulate Emission matter mg/NM3
	less than 2	1200*
	2 to less than 10	800*
	10 to less than 15	600*
	15 and above	150**

*to meet the respective standards, cyclone/multicyclone is recommended as control equipment with the boiler.**to meet the standard, bag filter/ESP is recommended as control equipment with the boiler.Note. - (i) 12% of CO^2 correction shall be the reference value for particulate matter emission standards for all categories of boilers.(ii)These limits shall supersede the earlier limits notified under Schedule I at serial number 34 of Environment (Protection) Act, 1986 vide notification G.S.R. 742(E), dated 30th August,1990.(iii)Stack Height for small Boilers.For the small boilers using coal or liquid fuels, the required stack height with the boiler shall be calculated by using the formula -$H=14\ Q^0\ ^3$Where H-Total stack height in metres from the ground level.Q=SO^2 emission rate in kg/hr.In no cse the stack height shall be less tham 11 metres.Where providing all stacks are not feasible using above formula the limit of 400 mg/Nm^3 for Q=SO^2 emission shall be met by providing necessary control equipment with a minimum stack height of 11 metres.

71. Pesticides industry	(i)Compulsory Parameters	mg/l except pH
	pH	6.5-8.5
	BOD (3 days at 270C)	100
	Oil Grease	10
	Suspended solids	100
	Bio-assay test	Minimum 90%survival of fish after 96 hours with 90% effluent and 10% dilution water. Test shall be carried out as per IS : 6502-1971.
	(ii) Additional Parameters	mg/l

(a) Heavy metal	
Copper	1.0
Manganese	1.0
Zinc	1.0
Mercury	0.01
Tin	0.1
Any other like Nickel	shallnot exceed 5 times the drinking water standards (BIS) individually.
(b) Organics	
Phenol Phenolic Compounds as C6H5OH	1.0
(c) Inorganics	
Arsenic as AS	0.2
Cyanide as CN	0.2
Nitrate as NO3	50
Phospateas P	5.0
(d) Specific pesticide	(microgram/litre)
Benzene Hexachloride	10
DDT	10
Dimethoate	450
Copper oxychloride	9600
Ziram	1000
2,4D	400
Paraquat	23000
Propanil	7300
Nitrogen	780
Other/below mentioned Pesticides individually	100

Other pesticides :

(i)Insecticides :

AluminiumPhosphide	Lindane	Pyrethrum extract
Dichlorovos	Malathion	Quinalphos
EDTC Mixer	Methyl Bromide	Monocrotophos
Ethylene Dibromide	Nicotine Sulphate	Carbaryl
Ethion	OxydemetonMethyl	Endosulfan
Fenitrothion	Methyl Parathion	Fenvalerate
Lime-sulphur	Phosphamidon	Phorate

Temephos	
(ii) Fungicides:	
Aureofungin	Organomercurials(MEMC PMA)
Barium Polysulphide	Sulphur(Colloidal, Wettable Dust)
Cuprous Oxide	Steptocycline
Ferbam	Thiram
Mancozeb	Zineb
Manab	Carbendazim
Nickel Chloride	Tridemorph
(iii) Rodenticides	
Comafuryl	
Warfarin	
Zinc Phosphide	
(iv) Nematicides:	
MethamN-Sodium	
(v)Weedicides:	
Fluchloralin	
Isoproturon	
Butachlor	
Anilphos	
(vi) Plant Growth Regulants:	
ChloromequatChloride	
NemphaleneAcetic Acid	
(vii) Any other pesticide not specified above.	

Note. - (1) Limits shall be complied with at the end of the treatment plant before any dilution.(2)From the "Additional Parameters" specified in 71 (ii), only the relevant parameters (based on the raw-materials used and products manufactured) may be the concerned State Board on a case-to-case basis .(3)No limit for COD is prescribed. If the COD in a treated effluent is persistently more than 250 mg/l, such industrial units are required to identify the chemicals causing the same. In case, there are found to be toxic as defined in Schedule I of the Hazardous Chemicals Rules, 1989, the State Boards in such cases may direct the industries to install tertiary treatment, stipulating time-limit. This may be done on a case-to-case basis.(4)Solar evaporation followed by incineration is a recognised practice, provide the guidelines of solar evaporation as given below are followed:Guidelines on solar evaporation system or waste-water from pesticide industry.(i)Solar evaporation pans shall be constructed in such a way that the bottom is at least one metre above the ground level.Tripura State Pollution Control Board 89(ii)Solar evaporation pans shall be leak proof

and construction and designed as per IS: 90.(iii)The solar evaporation pans shall be designed on the basis of evaporation rate matching to the out put of waste-water.(iv)Waste-water must be pre-treated as below before subjecting to solar evaporation:(a)Oil and grease and floating organics shall be removed so that the rate of evaporation is not affected.(b)Acidic/Alkaline waste must be neutralised before solar evaporation to maintain pH in the range of 6.5 to 8.5.(c)Toxic volatile matter shall be removed so as not to cause air pollution.(v)During the rainy season, storm water shall not be allowed to mix with process waste and enter the pans. The waste-water shall in no case outflow from the evaporation pans. Alternative arrangements shall be made to hold the waste-water in proper impervious tanks and if necessary, force evaporated.(vi)In no circumstances, the liquid effluent shall be discharged without conforming to the minimal national standards or stored in a holding arrangement which is likely to cause pollution.(vii)The sludge from the solar evaporation pans shall be incinerated or disposed as per the guidelines for management and handling of hazardous waste, published by the Ministry of Environment and Forests, Government of India, after obtaining authorisation from the State Pollution Control Board under the Hazardous Wastes (Handling and Management) Rules, 1989.(viii)The facility shall be protected from flood and storm to prevent embankments from erosion or any other damage which may render any portion inoperable.(ix)Facilities shall be protective enclosure to keep wildlife, domestic animals, unauthorised persons, etc., away.

72. Oil Drilling and Gas Extraction Industry

A.Standards for Liquid Effluent

1.0On-Shore facilities (For Marine Disposal)

pH	5.5-9.0
Oil Grease	10 mg/l
Suspended solids	100 mg/l
BOD(3 days at 27°C)	30 mg/l

Notes. - (i) For on-shore discharge of effluents, in addition to the standards prescribed above, proper marine outfall has to be provided to achieve the individual pollutant concentration level in sea water below their toxicity limits as given below, within a distance of 50 metre from the discharge point, in order to protect the marine aquatic life:

Parameter	Toxicity limit, mg/l
Chromium as Cr	0.1
Copper, as Cu	0.05
Cyanide, as CN	0.005
Fluoride, as F	1.5
Lead, as Pb	0.05
Mercury, as Hg	0.01
Nickel, as Ni	0.1
Zinc, as Zn	0.1

(ii)Oil and gas drilling and processing facilities, situated on land and away from saline water sink, may opt either for disposal of treated water by on-shore disposal of by re-injection in abandoned well, which is allowed only below a depth of 1000 metres from the ground level. In case of

re-injection in abandoned well the effluent have to comply only with respect to suspended solids and oil and grease at 100 mg/l and 10 mg/l, respectively. For on- shore disposal, the permissible limits are giveN below:

Sl. No.	Parameter	On-shore discharge standards (Not to exceed)
1	2	3
1.	pH	5.5-9.0
2.	Temperature	40°C
3.	Suspended Solids	100 mg/l
4.	Zinc	2 mg/l
5.	BOD	30 mg/l
6.	COD	100mg/1
7.	Chlorides	600 mg/l
8.	Sulphates	1000 mg/l
9.	TDS	2100 mg/l
10.	%Sodium	60 mg/l
11.	Oil and Grease	10 mg/l
12.	Phenolics	1.2 mg/l
13.	Cyanides	0.2 mg/l
14.	Fluorides	1.5 mg/l
15.	Sulphides	2.0 mg/l
16.	Chromium (Cr+6)	0.1 mg/l
17.	Chromium (Total)	1.0 mg/l
18.	Copper	0.2 mg/l
19.	Lead	0.1 mg/l
20.	Mercury	0.01 mg/l
21.	Nickel	3.0 mg/l

2.0Off-shore facilities :For off-shore discharge of effluents, the oil content of the treated effluent without dilution shall not exceed 40 mg/l for 95% of the observation and shall never exceed 100 mg/l. Three 8-hourly grab samples are required to be collected daily and the average value of oil and grease content of the three samples shall comply with these standards.B. Guidelines for Discharge of Gaseous Emission:1.0DG Sets .1.1DG Sets at drill site as well as production station shall conform with the norm notified under the Environment (Protection) Act, 1986.2.0Elevated/ground flares.2.1Cold Venting of gases shall never be resor1ed to and all the gaseous emissions are to be flared.2.2All flaring shall be done by elevated flares except where there is any effect on crop production in adjoining areas due to the flaring. In such cases, one may adopt ground flaring.2.3In case of ground flare, to minimise the effects of flaring, the flare pit at Group Gathering Station(GGS)/Oil Collecting Station(OCS) and Group Collection Station(GCS) shall be made of RCC surrounded by a permanent wall (made of refractory brick) of minimum 5m height, to reduce the radiation and glaring effects in the adjoining areas.2.4A green belt of 100m width may be developed around the flare after the refractory wall in case of ground flaring.2.5If the ground flaring with

provision of green belt is not feasible, enclosed ground flare system shall be adopted, and be designed with proper enclosure height, to meet the ground level concentration(GLC) requirement.2.6In case of elevated flaring, the minimum stack height shall be 30m. Height of the stack shall be such that the maximum GLC never exceeds the prescribed ambient air quality limit.3.0Burning of effluent in the pits shall not be carried out at any stage.[C. Guidelines for Disposal of Solid Waste, Drill Cutting and Drilling Fluids for Off-shore and On-shore Drilling Operation] [Substituted by G.S.R. 546(E), dated 30-8-2005 (w.e.f. 30-8-2005).]:-

1. Disposal of Drill Cuttings and Drilling Fluids for On-shore Installations:

(a)Drill Cuttings (DC) originating from on-shore or locations close to shore line and separated from Water Base Mud (WBM) should be properly washed and unusable drilling fluids (DF) such as WBM, Oil Base Mud (OBM), Synthetic Base Mud (SBM) should be disposed off in a well designed pit lined with impervious liner located off-site or on-site. The disposal pit should be provided additionally with leachate collection system.Design aspects of the impervious waste disposal pit; capping of disposal pit should be informed by the oil industry to State Pollution Control Board (SPCB) at the time of obtaining consent.(b)Use of diesel base mud is prohibited. Only WBM should be used for on-shore oil drilling operations.(c)In case of any problem due to geological formation for drilling, low toxicity OBM having aromatic content1% should be used. If the operators intend to use such OBM to mitigate specific whole problem/SBM it should be intimated to Ministry of Environment and Forests/State Pollution Control Board.(d)The chemical additives used for the preparation of DF should have low toxicity, i.e., 96 hr LC5030,000 mg/1 as per mysid toxicity or toxicity test conducted on locally available sensitive sea species. The chemicals used (mainly organic constituents) should be biodegradable.(e)DC separated from OBM after washing should have oil content at 10 mg/kg for disposal into disposal pit.(f)The waste pit after it is filled up shall be covered with impervious liner, over which, a thick layer of native soil with proper top slope is provided.(g)Low toxicity OBM should be made available at installation during drilling operation.(h)Drilling wastewater including DC wash water should be collected in the disposal pit evaporated or treated and should comply with the notified standards for on-shore disposal.(i)Barite used in preparation of DF shall not contain Hg1 mg/kg and Cd3 mg/kg.(j)Total material acquired for preparation of drill site must be restored after completion of drilling operation leaving no waste material at site. SPCB should be informed about the restoration work.(k)In case, environmentally acceptable methods for disposal of drill waste such as (a) injection to a formation through casing annuals, if conditions allow (b) land farming at suitable location (c) bio-remediation (d) incineration or (e) solidification can be considered, in such cases oil industry is required to submit proposal to Ministry of Environment and Forests/State Pollution Control Board (MoEF/SPCB) for approval.

2. Disposal of Drill Cutting and Drilling Fluids for Off-shore Installations:

(a)Use of diesel base mud is prohibited. Only WBM is permitted for off-shore drilling. If the operator intend to use low toxicity OBM or SBM to mitigate specific hole problems in the formation, it should be intimated to MoEF/SPCB. The low toxicity OBM should have aromatic content1%.(b)The toxicity of chemical additives used in the DF (WBM or OBM or SBM) should be biodegradable (mainly organic constituents) and should have toxicity of 96 hr LC50 Value 30,000

mg/1 as per mysid toxicity or toxicity test conducted on locally available sensitive sea species.(c)Hexavalent chromium compound should not be used in DF. Alternative chemical in place of chrome lignosulfonate should be used in DF. In case, chrome compound is used, the DF, DC should not be disposed off-shore.(d)Bulk discharge of DF in off-shore is prohibited except in emergency situations.(e)WBM/OBM/SBM should be recycled to a maximum extent. Unusable portion of OBM should not be discharged into sea and shall be brought to on-shore for treatment and disposal in an impervious waste disposal pit.(f)Thoroughly washed DC separated from WBM/SBM and unusable portion of WBM/SBM having toxicity of 96 hr LC50 30,000 mg/1 shall be discharged off-shore into sea intermittently, at an average rate of 50 bbl/hr/well from a platform so as to have proper dilution and dispersion without any adverse impact on marine environment.(g)Drill cutting of any composition should not be discharged in sensitive areas notified by the Ministry of Environment and Forests.(h)In case of specific hole problem, use of OBM will be restricted with zero discharge of DC. Zero discharge would include re-injection of the DC into a suitable formation or to bring to shore for proper disposal. In such a case, use of OBM for re-injection should be recorded and made available to the regulatory agency. Such low toxic OBM having aromatic content 1% should be made available at the installation.(i)In case, DC is associated with high oil content from hydrocarbon bearing formation, then disposal of DC should not have oil content 10 gm/kg.(j)The DC wash water should be treated to confirm limits notified under EPA, before disposal into sea. The treated effluent should be monitored regularly.(k)Discharge of DC from the installation located within 5 km away from shore should ensure that there is no adverse impact on marine Eco-system and on the shore. If, adverse impact is observed, then the industries have to bring the DC on-shore for disposal in an impervious waste disposal pit.(l)If any, environmental friendly technology emerges for substitution of DF and disposal technology, it may he brought to the notice of MoEF and regulatory agencies. If the operator desires to adopt such environment friendly technology a prior approval from Ministry of Environment and Forests is required.(m)Barite used in preparation of DF shall not contain Hg 1 Mg/kg and Cd 3 mg/kg.(n)Oil drilling operators are required to record daily discharge of DC and DF to off-shore and also to monitor daily the effluent quality, and submit the compliance report once in every six month to Ministry of Environment and Forests.

73. [Pharmaceutical (Manufacturing and Formulation) Industry] [Substituted by G.S.R. 512(E), dated 9-7-2009 (w.e.f. 9-7-2009).]

Effluent Standards

(i)Compulsory Parameters	Limiting concentration in mg/1, expect for pH
pH	6.0-8.5
Oil grease	10
BOD (3 days 27°C)	100*
Total suspended solids	100
Bioassay Test	90% survival of fish after first

	96hours in 100% effluent**
(ii) Additional Parameters	
Mercury	0.01
Arsenic	0.20
Chromium (Cr6+)	0.10
Lead	0.10
Cyanide	0.10
Phenolics(C6H5SOH)	1.0
Sulphides(as S)	2.0
Phosphate (as P)	5.0

Note. -*The BOD and COD limits shall be 30 mg/1 and 250 mg/1 respectively, if treated effluent is discharged directly into a fresh water body, i.e., steam, canal, river or lake.**The Bioassay Test shall he conducted as per IS: 6582-1971.(i)Parameters listed as 'Additional Parameters' shall he prescribed depending upon the process and product.(ii)Limits for total dissolved solids in effluent shall be prescribed by the concerned pollution control board/pollution control committee depending upon the recipient water body.

[A. Emission from Incinerator]

	Limiting concentration in mg/Nm3, Unless stated	Sampling duration in (minutes) unless stated	
Particulate Matter	50	30 or more (for sampling about 300 litre emission)	
HCI	50	30	
SO2	200	30	
CO	100	30	
Total Organic Carbon	20	30	
Total Dioxins and Furans*	Existing Incinerator	0.2 ng TEQ/Nm3	8 hour
	New Incinerator	0.1 ng TEQ/Nm3	8 hour
Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V+Cd+Th+Hgand their compounds	1.5	2 hours	

*The existing plant shall comply with norms for dioxins andfurans as 0.1 ng/TEQ/ Nm3within 5 years from the dateof notification.

Notes. - (i) All monitored values shall be corrected to 11%oxygen on dry basis.

(ii) The CO2concentration In tall gas shall not beless than 7%.

(iii) In case, halogenated organic waste is less than 1% byweight in input waste, all the facilities in twin chamberincinerator shall be designed so as to achieve a minimumtemperature of 850 ± 25°C in primary chamber and 950°Cin secondary combustion chamber and with a gas residence time insecondary combustion chamber not less than 2 (two) seconds.

or

all the facilities in single chamber incinerator for gaseoushazardous waste shall be designed so as to achieve a minimumtemperature of 950°C in the combustion chamber with a gasresidence time not less than 2 (two) seconds.

(iv) In case halogenated organic waste is more than 1% byweight in input waste, waste shall be incinerated only in twinchamber incinerators and all the facilities shall be designed toachieve a minimum temperature of 850 ± 25°C in primarychamber and 1100°C in secondary combustion chamber with a gasresidence time in secondary combustion chamber hot less than 2(two seconds).

(v) Scrubber meant for scrubbing emissions shall not be usedas quencher.

(vi) Incineration plants shall be operated (combustionchambers) with such temperature, retention time and turbulence,as to achieve Total Organic Carbon (TOC) content in theincineration ash and residue less than 3%, and their loss onignition is less than 5% of the dry weight. In case ofnon-conformity, ash and/or residue shall be re-incinerated.

(vii) The incinerator shall have a chimney of at least thirtymetre height.

B. Effluent from Incinerator

(i) Effluent from scrubber (s) and floor washing shall flowthrough closed conduit/pipe network.

(ii) Storm water shall not be allowed to mix with scrubberwater and/or floor washings.

(iii) Storm water shall be channelized through separate drainspassing through a HDPE lined pit having holding capacity of 10minutes (hourly average) of rainfall.

(iv) The built up in Total Dissolved Solids (TDS) inwastewater of floor washings shall not exceed 1000 mg/I over andabove the TDS of raw water used.

(v) Effluent shall not be stored in holding tank(s) in suchmanner which may cause pollution to groundwater."

(vi) Effluent (scrubber water and floor washings) shall bedischarged into receiving water conforming to the normsprescribed under Schedule VI: General Standards for Discharge ofEnvironment Pollutions (Part A: Effluents) notified under theEnvironment (Protection) Rules, 1986.

74. [Brick Kilns] [Substituted by Notification No. G.S.R. 543 (E) dated 22.7.2009 (w.e.f. 19.11.1986)]

Emission Standards

(i) Bull's Trench Kiln (BTK)

	Category*	Limiting concentration in mg/Nm3
Particular matter	small	1000
	medium	750
	large	750
		Minimum (metre)
Stack height	small	22 or induced draft fan operating with

		minimum draft of 50 mmWG with 12 metre stack height.
	medium	27 or induced draft fan operating with minimum draft of 50 mmWG with 15 metre stack height.
	large	30 or induced draft fan operating with minimum draft of 50 mmWG with 17 metre stack height.
*Category	Trench width (m)	Production (bricks/day)
small BTK	4.50	Less than 15,000
medium BTK	4.50-6.75	15,000-30,000
large BTK	above 6.75	above 30,000
(ii) Down-Draft Kiln (DDK)		
	Category++	Limiting concentration in mg/ Nm3
Particular matter	small/large/medium	1200
		Minimum (metre)
Stack height	small	12
	medium	15
	large	18
Category++	Production (bricks/day)	
Small DDK	less than 15,000	
medium DDK	15,000-30,000	
large DDK	above 30,000	
(iii) Vertical Shaft Kiln (VSK)		

	Category**	Limiting concentration in mg/ Nm3
Particular matter	small/large/medium	250
		Minimum (metre)
Stack height	small	11 (at least 5.5 m from loading platform)
	medium	14 (at least 7.5 m from loading platform)
	large	16 (at least 8.5 m from loading platform)
**Category	No. of shaft	Production (bricks/day)
small VSK	1-3	Less than 15,000
medium BTK	4-6	15,000-30,000
large BTK	7 or more	above 30,000

Notes. - 1. Gravitational Settling Chamber alongwith fixed chimney of appropriate height shall be provided for all Bull's Trench kilns.

2. One chimney per shaft in Vertical Shaft Kiln shall be provided. The two chimneys emanating from a shaft shall either be joined (at the loading platform in case of brick chimney or at appropriate level in case of metal chimney) to form a single chimney.

3. The above standards shall be applicable for different kilns if coal, firewood and/or agricultural residues are used as fuel.

Sl.No.	Industry	Parameter	Standard
(1)	(2)	(3)	(4)
[75] [Substituted by Notification	Soda Ash Industry		EffluentstandardsA. Solvay Proces

No. G.S.R. 424 (E) dated 1.6.2011 (w.e.f. 19.11.1986)]

	LimitingConcentrationing mg/1 except for pH, Temperature and Bio-assay			
	Creek	Marine CoastalZone	Estuary Area	Inland SurfaceWater
Suspended Solids	500*	1000*	200	100
Ammonical Nitrogenas N	50	50	50	50
Oil and Grease	5	5	5	5
Bio-assay***	Minimum 90%survival of fish after 96 hours in 100% effluent			
pH	6.5-9.0			
Tempertaure	Not ot exceed 5°Cabove the ambient temperature of the reveiving water body			

*The effluentdischarge point in creek shall be beyond low tide line.

**The diffusersystem shall be located in conformity with the Coastal RegulationZone Notification , 2011 at a minimum depth of 5 metres below lowtide level and with exit velocity for effluent more than 3metres/sec

***The Bio-assaytest shall be conducted as per IS :6582-1971	
B.Dual Process	
InlandSurface Water	
ph	6.5-9.0
AmmonicalNitrogen, as N	50
Nitrate Nitrogen,as N	10
Cyanide, as CN	2
HexavalentChromium	0.1
Total Chromium	2
Suspended Solids	100
Oil and Grease	10
C.Stormwater	

Note :-

(i) Stormwatershall not be allowed to mix with effluent and/or floor washings.

(ii) Stormwaterwithin battery limit of industry shall be channelized throughseparate drain (s) passing through HDPE lined pit(s) each havingholding capacity of 10 minutes (hourly average) of

rainfall
forits
catchment
area

76. Emission Standard for SO^2 from Cupola furnace:

Standard for Sulphur Dioxide emission from Cupola Furnace :

Characteristics	Emission limit
Sulphurdioxide (S02) emission	300 mg/Nm3at 12% CO2corrections

To achieve the standard, foundries may install scrubber, followed by a stack of height six times the diameter of the Cupola beyond the charging door.Note. - In case due to some technical reasons, installation of scrubber is not possible, then value of S02 to the ambient air has to be effected through the stack height.

77. Specifications of Motor Gasoline for Emission Parameters:

Sl. No.	Characteristics	Requirement	Method of test ref. to P: of IS: 1448
(i).	Reid Vapour Pressure at 38°C, Kpa	35 to 70	P : 39
(ii).	Benzeno, Percent by volume, Max	5.0(1)	P: 104
(iii).	Lead Content(as Pb)g/l, Max	0.15(low leaded)(2) 0.013 unleaded)	P: 38
(iv).	Sulphur, percent by mass, Max	0.10 (unleaded) 0.20 (leaded)	P : 34
(v).	Potential Gum, g/m3, Max	50	ASTM 873 : 8
(vi).	Gum (Solvent Washed)g/m3Max	40	P : 29
(vii).	Oxygenates Content Ether (MTBE, ETBE)Alcohol,percent by volume, Max	15	
(viii).	Phosphorus	See Foot Note(3)	ASTMD 3231

(1)3.0 per cent by volume maximum in metro cities by 2000 AD.(2)0.15 g/l by 31st December, 1996 (for entries country). 0.013 g/l by April 1995 (in four metro cities);by 1st December,1998(for all State capitals/UTs and major metro cities) and by 1st April, 2000 for the entire country.(3)Phosphorous containing additives shall be absent.Note. - (a) Above specifications applies to leaded as well as unleaaed petrol except lead content.(b)For new refineries coming up during or after 1997 the specification applicable by 2000 for existing refineries shall be applicable by 1997.

78. Specification of Diesel Fuel for Emission Related Parameters :

Characteristics	Requirement

Sl. No.			Method of Test Ref. to P : or IS : 1448
(i)	Density at 15°C, Kg/m3	820 to 880 (1)	P : 32
(ii)	CetaneNumber, Min	45°0(2)	P : 9
(iii)	Distillation 85 percent by volume recovery	350	P : 18
	at °C Max 95 per cent by volume recovery at °C Max	370	
(iv)	Sulphur, percent by mass	0.50(3)	P : 33

(1)820 to 860 by 2000 AD(2)48 by 31st December, 1998 (except in the refineries- Digboi, Gauhati and Bongaigaon Refineries Petrochemicals Ltd.).(3)(i)0.50 per cent by mass by 1st April 1996 in four metros and Taj Trapezium;(ii)0.25 per cent by mass by 1st October, 1996 in Taj Trapezium;(iii)0.25 per cent by mass by 1st April, 1996 throughout the country.Note. - (a) Above specifications apply to HSD only.(b)For new refineries coming during or after 1997 specification applicable by 2000 for existing refineries shall be applicable by 1997.(c)"P" refers to parts of IS:1448.

Sl. No.	Industry	Parameter	Standards		
			New Batteries (at Green Field Site)	Rebuild Batteries	Existing Batteries
79. [] [Substituted by G.S.R. 46(E), dated 3-2-2006 (w.e.f. 3-2-2006).]	Coke oven plants (by product recovery type)	Fugitive Visible Emissions			
		(a) Leakage from door	5 (PLD)*	10 (PLD)*	10 (PLD)*
		(b) Leakage from charging lids	1 (PLL)*	1 (PLL)*	1 (PLL)*
		(c) Leakage from AP Covers	4 (PLO)*	4 (PLO)*	4 (PLO)*
		(d) Charging emission (second/charge)	16 (with HPLA)*	50 (with HPLA)*	75
		Stack Emission of Coke Oven			
		(a) SO2(mg/Nm3)	800	800	800
		(b) Nox(mg/Nm3)	500	500	500
		(c) SPM (mg/Nm3)	50	50	50
		(d) SPM emission during-charging-for stamp charging batteries (stack emission (mg/Nm3)	25	25	25

(e) SPM emission during coke pushing (stack emission) gm/ton of coke	5	5 (applicable to stationary land based system)	-
(f) Sulphur in Coke Oven gas used for heating (mg/Nm3)	800	-	-
Emission for quenching operation			
(a)Batteryarea (top of the battery)	5	5	5
(b) Other units in coke oven plant	2	2	2
(c) Ambient air standards (mg/Nm3)	10	10	10

For control of emissions and to maintain environmental quality in work zone area, the following guidelines shall be followed, namely:-(i)New coke oven units shall follow any of the low-emission procedures, such as, coke dry cooling, non-recovery coke-ovens. Indirect Quenching Process, Jumbo coke oven reactor, modified Wet Quenching System with appropriate environmental controls (e.g., baffles, filtering media, collection and treatment of residual water from quench tower and recycling; Treated effluent conforming to the effluent discharge standards can be used for quenching, Use of untreated process water as quenching water shall not be permissible).(ii)Effective pollution control measures (for e.g., Extensive maintenance and cleaning of oven doors and frame seals, ascension pipes, charging holes and lids and other equipment; On-main charging system(HPLA);Luting charging holes with clay-suspension; Modified guide/transfer car with emission control system, etc., shall be used to reduce coal charging and coke pushing emissions.(iii)During rebuilding or installing new coke oven batteries, the following clean technology and pollution control measures be adopted:(a)air-cooled self-sealing dorrs;(b)the hydro-jet cleaning system shall be provided for the door and door frame cleaning with a facility of hydro jet pressure of 600kg/cm2;(c)the charging should be accomplished wiht hermetically sealed charging sleeves and screw feeder in charging car. The charging car. The charginh car should also be equipped with magnetic lid lifter and lid an frame cleaning mechanism (applicable to top charging batteries);(d)to provide aspiration through high-pressure ammonia liquor (HPLA) injection in goose neck and emission should be transferred directly to gas collecting mains;(e)water sealed AP covers should be provided;(f)computerised combustion control and moisture control systems.(iv)In addition to the above the new coke oven batteries, which will be installed after the date of publication of this notification at green field site and rebuild batteries wherever technically feasible should also be equipped to treat their pushing emission with stationary land-based system with collection hood and wet scrubbing units for gas cleaning.(v)In the case of existing coke ovens with wet quenching, the new procedures as in (i) and (ii) shall be adopted.(vi)The fugitive visible emission standards, i.e., PLD*, PLL* and PLO*, charging emission (second/charge).Note. - Units set up after the publication of this notification shall be treated as new units.

*HPLA Aspiration through high pressure liquor injection in goose neck.

*PLD Percent leaking doors;

*PLL Percent leaking lids; and

*PLO Percent leaking off takes.

80. [SPECIFICATIONS OF TWO-STROKE ENGINE OIL: [Inserted by G.S.R. 504(E), dated 20.8.1998 (w.e.f. 21.8.1998).]

Specification	Standard	Test Procedure
Two-stroke engine oil grade JASO-FC as per JASO M-345-93specification and APITC as per specification No. ASTM D 4859	Minimum smoke Index of 85	JASO-M 342-92 for JASO-FC and ASTM D-4857 for APITC

The above specification shall be effective from the 1st day of April,1999.

81. [Battery manufacturing industry

(i)Lead Acid Battery Manufacturing Industries. Emission Stanadrds.]

Source	Pollutant	Standards Concentration based (mg/Nm3)
Grid casting	Lead	10
	Particulate matter	25
Oxide manufacturing	Lead	10
	Particulate matter	25
Paste mixing	Lead	10
	Particulate matter	25
Assembling	Lead	10
	Particulate matter	25
PVC Section	Particulate matter	150

-To comply with the respective standards, all the emissions from above-mentioned sources shall be routed through stack connected with hood and fan in addition to above, installation of control equipment viz., bag filter/ventury scrubber, is also recommended.-The minimum stack height shall be 30 m.Liquid Effluent Discharge Standards :

Pollutants	Concentration based standards
pH	6.5-8.5
Suspended solids	50 mg/1
Lead	0.1 mg/l

(ii)Dry Cell Manufacturing Industry: Emission Standards

Pollutant	Standards Concentration-based (mg/Nm3)
Particulate matter	50
Manganese as Mn	5

-To Comply with the respective standards, all the emissions from above-mentioned sources shall be routed through stack connected with hood and fan. In addition to above, installation of control equipment, viz., bag filter/ventury scrubber, is also recommended.-The minimum stack height shall be 30m.Effluent Standards

Pollutant	Concentration Based standards
pH	6.5-8.5
Total suspended solids	100mg/l
Manganese as Mn	2mg/l
Mercury as Hg	0.02mg/l
Zinc as Zn	5 mg/l

(iii)Secondary Lead Smelters :

Pollutant	Concentration Based standards
Lead as Pb	10 mg/Nmp3
Particulate matter	50 mg/Nm3
Minimum stack height	30m

82. Environmental Standards for Gas/Naptha-based Thermal Power Plants

(i)Limit for emissions of NOx(a)For existing units-150ppm (v/v) at 15 Per cent excess oxygen.(b)For new units with effect from 1.6.1999.

Total generation of gas turbine	Limit for Stack NOx emission [v/v), at 15% excess oxygen]
(a)400 MW and above	(i) 50 ppm for the units burning natural gas (ii) 100 ppm for the units burning naphtha.
(b) Less than 400MW but Upto 100 MW	(i) 75 ppm for the units burning natural gas. (ii) 100 ppm for the units burning naphtha
(c) Less than 100 MW	100 ppm for units burning natural gas or naphtha as fuel
(d) For the plants burning gas in a conventional boiler.	100 ppm

(ii)Stack height H in m should be calculated using the formula H-14Q0.3, where Q is the emission rate of SO2 in kg/hr, subject to a minimum of 30 mts.(iii)Liquid waste discharge limit

Parameter	Maximum limit of concentration (mg/1 except for pH and temperature)
2	3
pH	6.5-8.5
Temperature	As applicable for other thermal power plants.
Free available chlorine	0.5
Suspended Solids	100.0
Oil and grease	20.0

Copper (total)	1.0
Iron (total)	1.0
Zinc	1.0
Chromium (Total)	0.2
Phosphate	5.0

[***] [Serial No. 83 omitted by G.S.R. 371(E), dated 17.5.2002 (w.e.f. 17.5.2002). Earlier it was inserted by G.S.R. 7, dated 22.12.1998 (w.e.f. 2.1.1999).]

84. Temperature limit for discharge of condenser cooling Water From Thermal Power Plant :-

A: New thermal power plants commissioned after June 1, 1999:New thermal power plants, which will be using water from rivers/lakes/reservoirs shall install cooling towers-irrespective location and capacity. For thermal power plants which will use sea water for cooling purposes, the condition below will apply.B: New projects in coastal areas using sea water:The thermal power plants using sea water should adopt suitable system to reduce water temperature at the final discharge point so that the resultant rise in the temperature of receiving water does not exceed 7°C over and above the ambient temperature of the receiving water bodies.C: Existing thermal power plants:Rise in temperature of condenser cooling water from inlet to the outlet of condenser shall not be more than 10°C.D: Guidelines for discharge point:(1)The discharge point shall preferably be located at the bottom of the water body at midstream for proper dispersion of thermal discharge.(2)In case of discharge of cooling water into sea, proper marine outfall shall be designed to achieve the prescribed standards. The point of discharge may be selected in consultation with concerned State Authorities/NIO.(3)No cooling water discharge shall be permitted in estuaries or near ecologically sensitive areas such as mangroves, coral reefs/spawning and breeding grounds of acquatic flora and fauna.

85. Environmental Standards for Coal Washeries :-

1. Fugitive emission standards.

-The difference in the value of suspended particulate matter, delta (□), measured between 25 and 30 metre from the enclosure of coal-crushing plant in the downward and leeward wind direction shall not exceed 150 microgram per cubic meter. Method of measurement shall be High Volume Sampling and Average Flow Rate, not less than 1.1 m^3 per minute, using upwind downwind method of measurement:

2. Effluent discharge standards:

-The coal washeries shall maintain the close-circuit operation with zero effluent discharge.-If in case due to some genuine problems like periodical cleaning of the system, heavy rainfall, etc., it becomes necessary to discharge the effluent to sewer/land/stream then the effluent shall conform to the

following standards at the final outlet of the coal washery :

Sl. No	Parameter	Limits
1.	pH	5.5-9.0
2.	Total suspended solids	100 mg/l
3.	Oil Grease	10 mg/l
4.	B.O.D (3 days 27deg C)	30 mg/l
5.	COD	250 mg/l
6.	Phenolics	1.0 mg/l

3. Noise level standards :

-Operational/Working zone-not to exceed 85 dB(A) Leq for 8 hours' exposure.-The ambient air quality standards, in respect of noise as notified under the Environmental (Protection) Rules, 1986, shall be followed at the boundary line of the coal washery.

4. Code of practice for Coal Washery:

-Water or Water mixed chemical shall be sprayed at all strategic coal transfer points such as conveyors, loading/unloading points, etc. As far as practically possible conveyors, transfer points, etc., shall be provided with enclosures.-The crushers/pulverisers of the coal washeries shall be provided with enclosures, fitted with suitable air pollution control measures and finally emitted through a stack of minimum height of 30m, conforming particulate matter emission standard of 150 mg/Nm or provided with adequate water sprinkling arrangement.-Water sprinkling by using fine atomizer nozze1e arrangement shall be provided on the coal heaps and on around the crushers/pulverisers.-Area, in and around the coal washery shall be pucca either asphalted or concreted.-Water consumption in the coal washery shall not exceed 1.5 cubic meter per tonne of coal.-The efficiency of the setting ponds of the waste-water treatment system of the coal washery shall not be less than 90 per cent.-Green belt shall be developed along the roadside,coal- handling plants, residential complex, office building and all around the boundary line of tne coal washery.-Storage bunkers, hoppers, rubber decks in chutes and centrifugal chutes shall be provided with proper rubber linings.-Vehicles movement in the coal washery area shall be regulated effectively to avoid traffic congestion. High- pressure horn shall be prohibited. Smokes emission from heavy duty vehicles operating in the coal washeries should conform the standards prescribed under Motor Vehicle Rules, 1989.

86. Water quality standards for coastal waters marine outfalls.

In a coastal segment marine water is subjected to several types of uses. Depending on the types of uses and activities, water quality criteria have been specified to determine its suitability for a particular purpose. Among the various types of uses there is one use that demands highest level of water quality/purity and that is termed a "designated best use" in that stretch of the coastal segment. Based on this, primary water quality criteria have been specified for following five

designated best uses :-

Class	Designated best use
SW-1(See Table 1.1.)	Salt pans, Shell fishing, Mariculture and ecologically Sensitive Zone.
SW-II (See Table 1.2)	Bathing, Contact Water Sports and Commercial fishing.
SW-III (See Table 1.3)	Industrial cooling, Recreation (non-contact)and Aesthetics
SW-IV (See Table 1.4)	Harbour
SW-V (See Table 1.5)	Navigation and Controlled Waste Disposal.

The Standards alongwith rationale/remarks for various parameters for different designated best uses, given in Table 1.1 to 1.5TABLE 1.1PRIMARY WATER QUALITY CRITERIA FOR CLASS SW-I WATERS(For Salt Pans, Shell Fishing, Mariculture and Ecologically Sensitive Zone)

S.No.	Parameter	Standards	Rationale/Remarks
1	2	3	4
1.	pH range	6.5-8.5	General broad range, Conductive for propagation of acquatic lives is given. Value largely dependant upon soil-water interaction.
2.	Dissolved Oxygen	5.0 mg/1 or 60 per cent saturation value whichever is higher	Not less than 3.5mg/1 at any time of the year for protection of acquatic lives.
3.	Colourand Odour	No noticeable colour or offensive odour.	Specially caused by chemical compound like creosols, phenols, naphtha pyridine benzene, toluene, etc., causing visible colouration of salt crystal and tainting fish flesh.
4.	Floating Matters	Nothing obnoxious or detrimental for use purpose.	Surfactants should not exceed an upper limit of 1.0 mg/1 and the concentration not to cause any visible foam.
5.	Suspended Solids	None from sewage or industrial waste origin	Settleableinert matters not in such concentration that would impair any usages specially assigned to this class.
6.	Oil and Grease(including Petroleum Products)	0.1 mg/1	Concentration should not exceed 0.1 mg/1 as because it has effect on fish eggs and larvae.
7. [] [Substituted by G.S.R. 682(E), dated 5.10.1999 (w.e.f. 5.10.1999).]	Heavy Metals:		Values depend on :
		0.001 mg/1	

Mercury (as Hg)		(i) Concentration in salt, fish and shell fish.
Cadmium (as Cd)	0.001 mg/l	(ii) Average per capita consumption per day.
Lead (as Pb)	0.01 mg/1	(iii) Minimum ingestion rate that induces symptoms of resulting diseases.

Note. - SW-I is desirable to be safe and relatively free from hazardous,chemicals like pesticides, heavy metals and radionuclide concentrations. Their combined (synergistic or antagonistic) effects on health and aquatic lives are not yet clearly known. These chemicals undergo bio-accumulation, magnification and transfer to human and other animals through food chain. In areas where fisheries, salt pans are the governing considerations, and presence of such chemicals apprehended/reported, bio-assay test should be performed following appropriate methods for the purpose of setting case specific limits.TABLE 1.2PRIMARY WATER QUALITY CRITERIA FOR CLASS SW-II WATERS(For Bathing, Contact Water Sports and Commercial Fishing)

S.No.	Parameter	Standards	Rationale/Remarks
1	2	3	4
1.	pH range	6.5-8.5	Range does not cause skin or eye irritation and is also conducive forpropagatingaquaticlives.
2.	Dissolved Oxygen	4.0 mg/1 or 50 percent saturation value whichever is higher.	Not less than 3.5mg/1 at any time for protection of aquatic lives.
3.	Colourand Odour	No noticeable colour or offensive odour.	Specially caused by chemical compound like creosols, phenols, naptha, benzene, pyridine, toluene, etc., causing visible, colouration of water and tainting of and odour in fish flesh.
4.	Floating Matters	Nothing obnoxious or detrimental for use purpose	None in concentration that would impair usages specially assigned to this class.
5.	Turbidity	30 NTU (Nephelo Turbidity Unit).	Measured at 0.9m depth.
6.	Fecal Coliform	100/100 ml(MPN)	The average value not exceeding 200/100 ml. in 20 per cent of samples in the year and in 3consecutive samples in monsoon months.
7.	Biochemical Oxygen Demand (BOD) (3days at 27°C)	3 mg/1	Restricted for bathing (aesthetic quality ofwater). Also prescribed by IS : 2296-1974.

TABLE 1.3PRIMARY WATER QUALITY CRITERIA FOR CLASS SW-III WATERS(For Industrial Cooling, Recreation (non-contact) and Aesthetics)

S.No.	Parameter	Standards	Rationale/Remarks
1	2	3	4

1.	pH range	6.5-8.5	The range is conductive for propagation of aquatic species and restoring natural system.
2.	Dissolved Oxygen	3.0 mg/1 or 40 per cent saturation value whichever is higher	To protect aquatic lives
3.	Colourand Odour	No noticeable colour or offensive odour assigned to this class.	None in such concentration that would impair usages specifically assigned to this class.
4.	Floating Matters	No visible, obnoxious floating debris, oil slick, scum.	As in (3) above
5.	Fecal Coliform	500/100 ml(MPN)	Not exceeding 1000/100 ml in 20 percent of samples in the year and in 3 consecutive samples in monsoon months.
6.	Turbidity	30 NTU	Reasonably clear water for Recreation, aesthetic appreciation and Industrial Cooling purposes.
*7.	Dissolved Iron (as Fe)	0.5 mg/1 or less	It is desirable to have the collective concentration dissolved Fe and Mn less or equal to 0.5 mg/1 to avoid scaling effect.
*8.	Dissolved Manganese(as Mn)	0.5 mg/1 or less	

*Standards included exclusively for Industrial Cooling purpose. Other parameters same.TABLE 1.4PRIMARY WATER QUALITY CRITERIA FOR CLASS SW-IV WATERS(For Harbour Waters)

S.No.	Parameter	Standards	Rationale/Remarks
1	2	3	4
1.	pH range	6.0-9.0	To minimize corrosive and scaling effect.
2.	Dissolved Oxygen	3.0 mg/1 or 40 per cent saturation value whichever is higher	Considering bio degradation of oil and inhibition to oxygen production - through photosynthesis.
3.	Colourand Odour	No visible colour or offensive odour.	None from reactive chemicals which may corrode paints/ metallic surfaces
4.	Floating materials, Oil, grease and scum (including Petroleum products)	10 mg/1	Floating matter'Should be free from excessive living organisms which may clog or coat operative parts of marine vessels/equipment.
5.	Fecal Coliform	500/100 ml(MPN)	Not exceeding 1000/100 ml

			in 20 per cent of samples in the year and in 3 consecutive samples in monsoon months.
6.	Biochemical Oxygen Demand (3 days at 27°C)	5mg/1	To maintain water relatively free from pollution caused by sewage and other decomposable wastes.

TABLE 1.5PRIMARY WATER QUALITY CRITERIA FOR CLASS SW-V WATERS(For Navigation and Controlled Waste Disposal)

S.No.	Parameter	Standards	Rationale/Remarks
1	2	3	4
1.	pH range	6.0-9.0	As specified by New England Inter-state Water Pollution Control Commission.
2.	Dissolved Oxygen	3.0 mg/1 or 40 percent saturation value whichever is higher	To protect aquatic lives
3.	Colourand Odour	None in such concentrations that would impair any usages specially assigned to this class.	As in (i)above
4.	Sludge deposits, Solid refuse floating solids oil grease and scum	None except for such small amount that may result from discharge of appropriately treated sewage and or industrial wastes effluents.	As in (1) above
5.	Fecal Coliform	500/100 ml (MPN)	Not exceeding 1000/100ml in 20 per cent of samples in the year and in 3 consecutive samples in monsoon months

87. Emission Regulations for Rayon Industry:-

(a)Existing PlantsEstimation of Uncontrolled emission quantity (EQ) of CS2For VSFEQ=125 Kg of CS2/t of fibreFor VFY,EQ=225 Kg of CS2/t of fibre

Stack Height (H) requirement, m	Remarks
11Q 0.41-3 Vs D/u	A minimum of 80 per cent. of total emission shall pass through stack. If the calculated stack height is less than 30m, a minimum height of 30m shall be provided.
Where	Q -CS2emission rate, kg/hr
	VS - stack exit velocity, m/sec.

D - diameter of stack, m.

U - annual average wind speed at top of stack, m/sec.

Multiple Stacks :

1. If there are more than one stack existing in the plant, the required height of all stacks shall be based on the maximum emission rate in any of the stacks. In other words, all the stacks carrying CS2 emission shall be of same heights (based on the maximum emission rate).

2. Number of stacks shall not be increased from the existing number. However, the number of stacks may be reduced. The existing stacks may be rebuilt and if stacks are to be relocated, condition 3 below applies.

3. Spacing among the stacks (x) at the minimum shall be 3.0 H (in m). If distance, x, between two stacks is less than 3.0 H (in m), emission shall be considered as single point source and height of both the stacks shall be calculated considering all emission is going through one stack.

(b)Ambient Air Quality Monitoring :The industry shall instal three air quality monitoring stations for CS2 and H2S measurements in consultation with State Pollution Control Board (SPCB) to ensure attainment of WHO recommended ambient air quality norms (CS2 = 10O ug/m³ and H2S = 150 ug/m³, 24 = hr. average).(c)[For new plants/expansion projects being commissioned on or after 1.6.1999. [Substituted by G.S.R. 640(E), dated 16.10.2006 (w.e.f. 16.10.2006).]For new plants or expansion projects, the emission standards for existing plants covered in (a) above shall apply subject to compliance of the ambient air qulity norms for CS2 and H2S indicated in (b) above. The new plants or expansion projects shall provide adequate spcae for undertaking retrofittings.(Note: (a) and (b) above also apply to new plants/expansion projects).] [Inserted by G.S.R. 7, dated 22.12.1998 (w.e.f. 2.1.1999)]

88. [Generator Sets Run on Petrol and Kerosene

A. Emission Standards- The emission standards for Generator sets on Petrol and Kerosene shall be as follows:-

Class	Displacement(CC)	CO(g/kw-hr)	HC+NOx(G/kw-hr)
1	Upto99	_250	_12
2	99and upto 225	_250	_10
3	225	_250	_8

(i)Test method shall be as specified in SAE J 1088 and the measurement mode shall be 01-3 mode cycle specified under ISO 8178: Part 4 (Weighting Factor of 0.3 for 100 percent load, 0.5 for 75 percent load and 0.2 for 50 percent load);(ii)Any of the following institutions shall test and certify

emission standards for the petrol and kerosene based generator sets, at manufacturing stage, namely: -(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Harylilna);(c)The Indian Oil Corporation, Research and Development Centre, Faridabad (Haryana);(d)The Indian Institute of Petroleum, Dehradun (Uttarakhand); and(e)The Vehicle Research Development Establishment, Ahmednagar (Maharashtra),(iii), Type Approval or Conformity of Production certificates in respect of emission standards, issued prior to the date of publication of this notification and valid upto the 31st May 2014 or beyond, shall be re-issued considering above revised norms by the respective certification agency,B. Noise Limits.- (i) The noise limit for new generator sets run with petrol and kerosene shall be as follows:-

	NoiseLimits
SoundPower Level Lwa	86dBA

(ii)Any of the following institutions shall undertake 'type approval' and for 'verification of conformity of production' for noise norms for petrol and kerosene gensets, namely :-(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Haryana);(c)The Fluid Control Research Institute, Palghat (Kerala);(d)The National Test House, Ghaziabad (Uttar Pradesh);(e)The National Aerospace Laboratory, Bangalore (Karnataka); and(f)The Naval Science and Technology Laboratoy, Visakhapatnam (Andhra Pradesh).C. General Conditions

1. Applicability.- The stipulations in respect of emissions and noise referred to in entry A and entry B shall apply to all new generator sets using petrol and kerosene as fuel, manufactured in or, imported into India:

Provided that this provision shall not apply to,-(a)genset manufactured or, imported for the purpose of exports outside India; or,(b)genset intended for the purpose of Research and Development and not for sale or, captive use in India.

2. Requirement of certification. - Every manufacturer or importer (hereinafter referred to as manufacturer) of genset (hereinafter referred to as product) to which these conditions apply shall have a separate valid certificate of type approval for all the producproduct models for emission as well as noise norms being manufactured or imported.

3. Verification of conformity of production. - Every manufacturer shall submit its products to the verification for conformity of production for emission and noise, by any of the institutions, as applicable, every conformity of production year.

4. Sale of generator sets not complying with these conditions. - The sale of product model, not having valid type approval certificate, or not complying with the emission or noise norms, as determined by the verification for conformity of production, shall continue to be prohibited in India.

5. Requirement of conformance labeling. - (1) The manufacturer of the product shall affix a conformance label on the product containing the following requirements, namely:-

(i)the label shall be durable and legible;(ii)the label shall be affixed on a part necessary for normal operation of the product and not normally requiring replacement during the product life.(2)The conformance label must contain the following information, namely:-(i)name and address of the manufacturer (even, if the address is described in the owners manual);(ii)statement that this product conforms to the Environment (Protection) Rules, 1986; and(iii)type approval certificate number and time phase (namely from the January 2014, the January 2016 or the January 2017).

6. Nodal agency. - (1) The Central Pollution Control Board shall be the nodal agency for implementation of these stipulations.

(2)In case of any dispute or difficulty in implementation of these rules the matter shall be referred to the nodal agency.(3)The nodal agency shall constitute a Standing Committee for emission related issues and a National Committee for noise related issues, respectively to advice it on all matters related to the implementation of these rules including the dispute, if any.

7. Compliance and testing procedure. - (1) The compliance and testing procedure as published from time to time, if reviewed by Central Pollution Control Board shall be followed.

(2)The Central Pollution Control Board may revise the compliance and testing procedure.(3)The institutes referred to in paragraph A and B above shall submit the testing and certification details in respect of emission or, noise, as applicable to the Central Pollution Control Board, annually and the Central Pollution Control Board shall be free to depute its official(s) to oversee the testing.]

89. [Noise standards for fire-crackers. - [Inserted by Notification No. G.S.R. 682(E), dated 5.8.1999 (w.e.f. 19.11.1986)]

A. (i) The manufacture, sale or of fire-crackers generating noise level exceeding 125 dB(AI) of 145 dB(C) at 4 metres distance from the point of bursting shall be prohibited.(ii)For individual fire-cracker constituting the series (joined fire-crackers), the above mentioned limit be reduced by 5 log10 (N)dB, where N=number of crackers joined together.B. The broad requirements for measurement of noise from fire-crackers shall be-(i)The measurements shall be made on hard

concrete surface of minimum 5 metre diameter or equivalent.(ii)The measurements shall be made in free field conditions, i.e, there shall not be any reflecting surface upto 15 metre distance from the point of bursting(iii)The measurement shall be made with an approved sound level meter.C. [Petroleum and Explosives Safety Organization] [Substituted by Notification No. G.S.R. 535(E) dated 7.8.2013 (w.e.f 19.11.1986)] shall ensure implementation of these standards.Note. - dB(AI) : A-weighted impulse Sound Pressure level in decibel dB(C)pk: C - weighted Peak Sound Pressure level in decibel.][D. The fire crackers for the purpose of export shall be exempted from the sub-paragraphs A,B and C above, subject to the compliance of the following conditions, namely :-(i)the manufacturer shall have an export order;(ii)the fire crackers shall conform to the level prescribed in the country to which it is exported;(iii)they shall have a different packing colour code; and(iv)there shall be a declaration on the box "not for sale in India" or "only for export in other countries.]

90. [Standards for coal mines] [Inserted by G.S.R. 742(E), dated 25.9.2000 (w.e.f. 25.9.2000).]

1. Air Quality Standards. - The Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), Sulphur Dioxide (SO2) and Oxides of Nitrogen (NOx) concentration in downwind direction considering predominant wind direction, at a distance of 500 metres from the following dust generating source shall not exceed the standards specified in the Tables I, II and III given below.

Dust Generating Sources. - Loading or unlading, Haul road, coal transportation road, Coal Handling Plant (CHP), Railway sliding, Blasting, Drilling, Overburden dumps, or any other dust generating external sources like coke ovens (hard as well as soft), briquette industry, nearby road, etc.TABLE I

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
I	Suspended Particulate Matter(SPM)	Annual Average*	360 µg/m3	- High Volume Sampling (Average flow rate notless than 1.1 m3/minute)
New Coal Mines (Coal Mines commenced operation after the date ofpublication of thisnotification)	20 hours**	500 µg/m3		
		180 µg/ m3		

RespirableParticulate Matter (size less than 10 µm) (RPM)	Annual Average*		RespirableParticulate Matter sampling and analysis	
24 hours*	250 µg/m3			
SulphurDioxide (SO2)	Annual Average*	80 µg/m3	1. Improved west and Gaeke method	
24 hours**	120 µg/m3	2. Ultraviolet fluorescene		
Oxide of Nitrogen as NO2	Annual Average*	80 µg/m3	1. Jacob and Hochheiser Modified (Na-Arsenic) Method	
24 hours**	120 µg/m3	2. Gas phase Chemiluminescence		

TABLE II

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
II	Suspended Particulate Matter (SPM)	Annual Average*	430 µg/m3	- High Volume Sampling (Average flow rate not less than 1.1 m3/minute)
Existing coal fields/mines given below:Karanpura, Ramgarh, Giridih, Rajhara, Wardha, Nagpur Silewara, Pench Kanhan, Patharkhera, Umrer, Korba, Chirimiri, Central India Coalfields (including Baikunthpur, Bisrampur), Singrauli, lb Valley, Talcher, Godavari-Valley and any other	24 hours**	600 µg/m3		
RespirableParticulate Matter (size less than 10 µm) (RPM)	Annual Average*	215 µg/ m3	RespirableParticulate Matter sampling and analysis	
24 hours*	300 µg/m3			
SulphurDioxide (SO2)	Annual Average*	80* µg/m3	1. Improved west and Gaeke method	

24 hours**	120 µg/m3	2. Ultraviolet fluorescene		
Oxide of Nitrogen as NO2	Annual Average*	80 µg/m3	1. Jacob and Hochheiser Modified (Na-Arsenic) Method	
24 hours**	120 µg/m3	2. Gas phase Chemiluminescence		

TABLE III

Category	Pollutant	Time weighted average	Concentration in Ambient Air	Method of Measurement
1	2	3	4	5
III	Suspended Particulate Matter (SPM)	Annual Average*	500 µg/m3	- High Volume Sampling (Average flow rate not less than 1.1 m3/minute)
Coal mines located in the coal fields of -- Jharia-Raniganj-Bokaro	24 hours**	700 µg/m3		
RespirableParticulate Matter (size less than 10 µm) (RPM)	Annual Average*	250 µg/ m3	RespirableParticulate Matter sampling and analysis	
24 hours*	300 µg/m3			
SulphurDioxide (SO2)	Annual Average*	80 µg/m3	1. Improved west and Gaeke method	
24 hours**	120 µg/m3	2. Ultraviolet fluorescene		
Oxide of Nitrogen as NO2	Annual Average*	80 µg/m3	1. Jacob and Hochheiser Modified (Na-Arsenic) Method	
24 hours**	120 µg/m3	2. Gas phase Chemiluminescence		

Note. -*Annual Arithmetic mean for the measurements taken in a year, following the guidelines for frequency of sampling laid down in clause 2.** 24 hourly/8 hourly values shall be met 92% of the time in a year. However, 8% of the time it may exceed but not on two consecutive days.Unauthorised construction shall not be taken as a reference of nearest residential or commercial place for monitoring.In case, any residential or commercial or industrial place falls within 500 metres of any dust generating sources, the National Ambient Air Quality Standards notified under Schedule VII shall be applicable.

2. Frequency of Sampling

-Air quality monitoring at a frequency of once in a fortnight at the dust generating sources given in clause 1 shall be carried out.-As a result of monthly monitoring, if it is found that the value of the pollutant is less than 50% of the specified standards for three consecutive months, then the sampling frequency may be shifted to two days in a quarter year (3 months).-In case, the value has exceeded the specified standards, the air quality sampling shall be done twice a week. If the results of four consecutive weeks indicate that the concentration of pollutants is within the specified standards, then fortnight monitoring may be reverted to.

3. Effluent Standards. - The standards for effluent discharge into sewer or stream or land, are given below :

pH	- 5.5-9.0
Chemical Oxygen Demand (COD)	- 250 mg/1
Total Suspended Solids (TSS)	- 100 mg/1
	200 mg/1 (Land for irrigation)
OilGrease(OG)	- 10mg/1

(Monitoring frequency of these parameters shall be once in a fortnight.)

Optional parameters. - All other parameters indicated in the general standards for discharge of environment pollutants under Schedule VI, shall be in addition to the effluent standards specified under clause 3.(Monitoring frequency shall be once in a year for the optional parameters.)

4.Noise Level Standards

	6.00 A.M. - 10.00 P.M.	10.00 P.M. - 6.00 A.M.
Noise level	Leq75 dB (A)	Leq70 dB (A)

(Monitoring frequency for noise level shall be once in fortnight).Occupational exposure limit of noise specified by Director-General of Mines Safety (DGMS) shall be complied with by the coal mines.[* * *] [Omitted 91. by Notification No. G.S.R. 535(E) dated 7.8.2013 (w.e.f. 19.11.1986)]

92. Standards for Effluents from Textile Industry

Parameter	Concentration not to exceed, milligram per litre (mg/1), except pH
pH	5.5-9.0
Total suspended solids	100
Bio-chemical oxygen demand (BOD)	30
Chemical oxygen demand (COD)	250
Total residual chlorine	1

Oil and grease	10
Total chromium as Cr	2
Sulphideas S	2
Phenoliccompounds as C6H5OH	1

Note. - 1. Where the treated effluent is discharged into municipal sewer leading to terminal treatment plant, the BOD may be relaxed to 100 mg/1 and COD to 400 mg/1.

2. The quantity of effluent (litre per kilogram of product) shall not exceed 100, 250 and 80 in composite cotton textile industry, composite woollen textile industry and textile processing industry, respectively.

93. Primary Water Quality Criteria for Bathing Waters

In a water body or its part, water is subjected to several types of uses. Depending on the types of uses and activities, water quality criteria have been specified to determine its suitability for a particular purpose. Among the various types of uses there is one use that demands highest level of water quality or purity and that is termed as "Designated Best Use" in that stretch of water body. Based on this, water quality requirements have been specified for different uses in terms of primary water quality criteria. The primary water quality criteria for bathing water are specified alongwith the rationale in Table 1.TABLE 1PRIMARY WATER QUALITY CRITERIA FOR BATHING WATER(Water used for organised outdoor bathing)

CRITERIA	RATIONALE	
1. Fecal Coliform MPN/100 ml:	500 (desirable) 2500 (Maximumpermissible)	To ensure low sewage contamination. Fecal Coliform and Fecal Streptococci are considered as they reflect the bacterial pathogenicity.
2. Fecal Streptococci MPN/100ml:	100 (desirable) 500 (Maximum permissible)	The desirable and permissible limits are suggested to allow for fluctuation in environmental conditions such as seasonal change, changes in flow conditions, etc.
3. pH:	Between6.5-8.5	The range provides protection to the skin and delicate organs like eyes, nose, ears, etc., which are directly exposed during outdoor bathing.
4. Dissolved Oxygen:	5 mg/1 or more	The minimum dissolved oxygen concentration of 5 mg/1 ensures reasonable freedom from oxygen consuming organic pollution immediately upstream which is necessary for preventing production of anaerobic gases (obnoxious gases) from sediment.
5. Biochemical Oxygen demand 3 day,27oC:	3 mg/1 or less	The Biochemical Oxygen Demand of 3 mg/1 or less of the water ensures reasonable freedom from oxygen demanding pollutants and prevents production of obnoxious gases.

94. [Noise Limit for Generator Sets Run with Diesel] [Inserted by G.S.R. 371(E), dated 17.5.2002 (w.e.f. 17.5.2002).]

1. Noise limit for diesel generator sets (upto 1000 KVA) manufactured on or after the [1st January, 2005] [Substituted by G.S.R. 448(E), dated 12.7.2004 (w.e.f. 12.7.2004).].

The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity upto 1000 KVA, manufactured on or after [the 1st January, 2005] [Substituted by G.S.R. 448(E), dated 12.7.2004 (w.e.f. 12.7.2004).] shall be 75 dB(A) at 1 metre from the enclosure surface.The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself.The implementation of noise limit for these diesel generator sets shall be regulated as given in paragraph 3 below.

2. Noise limit for DG sets not covered by paragraph 1. Noise limits for diesel generator sets not covered by paragraph 1, shall be as follows:-

2.1Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end.2.2The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB(A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/acoustic treatment. Under such circumstances the performance may be checked for noise reduction upto actual ambient noise level, preferably, in the night time). The measurement for Insertion Loss may be done at different points at 0.5m from the acoustic enclosure/room, and then averaged.2.3The DG set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A).2.4These limits shall be regulated by the State Pollution Control Boards and the State Pollution Control Committees.2.5Guidelines for the manufacturers/users of Diesel Generator sets shall be as under:

01. The manufacturer shall offer to the user a standard acoustic enclosure of 25 dB(A) insertion loss and also a suitable exhaust muffler with insertion loss of 25 dB(A).

02. The user shall make efforts to bring down the noise levels due to the DG set, outside his premises, within the ambient noise requirements by proper sitting and control measures.

03. Installation of a DG set must be strictly in compliance with the recommendations of the DG set manufacturer.

04. A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use.

3. Limits of Noise for DG sets (upto 1000 KVA) manufactured on or after the [1st January, 2005] [Substituted by G.S.R. 448(E), dated 12.7.2004 (w.e.f. 12.7.2004).].

3.1Applicability

01. These rules apply to DG sets upto 1000 KVA rated output, manufactured or imported in India, on or after [the 1st January, 2005] [Substituted by G.S.R. 448(E), dated 12.7.2004 (w.e.f. 12.7.2004)].

02. These rules shall not apply to-

(a)DG sets manufactured or imported for the purpose of exports outside India; and(b)DG sets intended for the purpose of sample and not for sale in India.3.2Requirement of Certification[Every manufacturer or assembler or importer (hereinafter referred to as the "manufacturer")] [Substituted by G.S.R. 752(E), dated 24.10.2008 (w.e.f. 24.10.2008).] of DG set (hereinafter referred to as "product") to which these regulations apply must have valid certificates of Type Approval and also valid certificates of Conformity of Production for each year, for all the product models being [manufactured or assembled or imported] [Substituted by G.S.R. 752(E), dated 24.10.2008 (w.e.f. 24.10.2008).] from [the 1st January, 2005] [Substituted by G.S.R. 448(E), dated 12.7.2004 (w.e.f. 12.7.2004).] with the noise limit specified in paragraph 1.3.3Sale, import or use of DG sets not complying with the rules prohibitedNo person shall sell, import or use of a product model, which is not having a valid Type Approval certificate and Conformity of Production certificate.3.4Requirement of conformance labelling(i)The [manufacturer] [Substituted by G.S.R. 752(E), dated 24.10.2008 (w.e.f. 24.10.2008).] of the "product" must affix a conformance label on the product meeting the following requirements;-(a)The label shall be durable and legible.(b)The label shall be affixed on a part necessary for normal operation of the "product" and not normally requiring replacement during the "product" life.(ii)The conformance label must contain the following information:-(a)Name and address of the [manufacturer] [Substituted by G.S.R. 752(E), dated 24.10.2008 (w.e.f. 24.10.2008).] (if the address is described in the owner's manual, it may not be included in the label).(b)Statement "This product conforms to the Environment (Protection) Rules, 1986".(c)Noise limit, viz., 75 dB(A) at 1m.(d)Type approval certificate number.(e)Date of manufacture of the product.3.5Nodal Agency(i)The Central Pollution Control Board shall be the nodal agency for implementation of these regulations.(ii)In case of any dispute or difficulty in implementation of these regulations, the matter shall be referred to the nodal agency.(iii)The nodal agency shall constitute a Committee to advise it on all matters; including the disputed matters, related to the implementation of these regulations.3.6Authorised agencies for certificationThe

following agencies are authorised to carry out such tests as they deem necessary for giving certificates for Type Approval and Conformity of Production testings of DG sets and to give such certificates :-(i)Automotive Research Association of India, Pune(ii)National Physical Laboratory, New Delhi(iii)Naval Science Technology Laboratory, Visakhapatnam(iv)Fluid Control Research Institute, Palghat(v)National Aerospace Laboratory, Bangalore3.7Compliance and Testing ProcedureThe compliance and testing procedure shall be prepared and published by the Central Pollution Control Board, with the help of the certification agencies.

4. [0 Exemption from the provisions of paragraph 1 and 3, for the products (diesel generator sets upto 30 KVA) purchased by the Ministry of Defence, Government of India.] [Inserted by G.S.R. 315(E), dated 16.5.2005 (w.e.f. 16.5.2005).]

The products manufactured in or imported into India till [30th April, 2007] [Substituted by G.S.R. 464(E), dated 7.8.2006 (w.e.f. 7.8.2006).] for the purpose of supplying to the Ministry of Defence, shall be exempted from the regulations given in paragraphs 1 to 3 above, subject to the following conditions, namely :-(i)The [manufacturer] [Substituted by G.S.R. 752(E), dated 24.10.2008 (w.e.f. 24.10.2008).] shall manufacture or import the products only after getting purchase order from the ministry of Defence and shall maintain the record of receipts, production/import, dispatch, etc., for inspection by the Central Pollution Control Board.(ii)The special dispensenation for noise norms shall be only for the mobile Defence vehicles which, with the present design/configuration, cannot carry the gensets with acoustic enclosures.(iii)Director, Ministry of Defence shall ensure and maintain the serial number of all gensets for the Army and he shall also direct the manufacturers of these gensets to emboss on the engine and the main body of the gensets, the words "For the use of Army only".(iv)The genset serial number shall be specially assigned by Ministry of Defence with the request for proposal and contract purchase order and this information shall be forwarded to the Central Pollution Control Board for inspection as and when required.(v)Registers shall be maintained at the manufacturers premises and in the Ministry of Defence to ensure that the number of gensets manufactured under special dispensation are not misused.(vi)The gensets procured under this dispensation shall be operated in the remote areas and not in the cities.(vii)This shall be a one-time exemption during which the Army shall remodel its vehicles to contain the new gensets and also obtain the necessary Type Approval of the genets.

5. [0 Exemption from the provisions of paragraph 1 and 3 for sixteen Diesel Generator sets of 45 KVA purchased by the Ministry of Defence, Government of India.] [Inserted by G.S.R. 566(E), dated 29.8.2007 (w.e.f. 29.8.2007).]

The 45 KVA DG sets manufactured in India for the purpose of their use in Mobile Decontamination System for use by the Ministry of Defence shall be exempted from the regulations given in paragraph 1 to 3 above subject to the following conditions, namely :-(i)The special dispensation for the noise norms shall be only for the DG sets to be used in Mobile Decontamination System (MDS) by Army which, with the present design/configuration cannot carry the gensets with acoustic enclosures.(ii)The Director, Ministry of Defence shall ensure and maintain the serial numbers for

sixteen gensets and he shall also direct the manufacturers of these generator sets to emboss on the engine and main body of the genets, the words "For the use of Army only in Mobile Decontamination System (MDS)".(iii)A register shall be maintained at the manufacturers premises and in the Ministry of Defence to ensure that only sixteen numbers of 45 KVA gensets are manufactured under special dispensation and are not misused elsewhere.

6. [0 Transportation of Diesel Generator Sets (above 250 KVA)

(i)Diesel Generator set shall be transported after fulfilling the requirement of certification specified in paragraph 3.2 as a complete unit with acoustic enclosure, or dismantled, with relevant genset number specified on acoustic enclosure and silencer for reassembling at the site of its operation.(ii)Compliance with the noise norms shall be monitored after reassembling the D.G. set at the location of the installation by the concerned State Pollution Control Board or, as the case may be, the Union Territory Pollution Control Committee.]

95. [Emission limits for new diesel engine up to 800 kW for generator set (Genset) application.- The emission limits for new diesel engine upto 800 kW for generator set (hereinafter referred to as Genset) application [shall, in respect of the power category 'upto 19 kW', as specified in column (I) of the table below, be effective from [1st May, 2015] [Substituted by Notification No. G.S.R. 771(E) dateed by 11.12.2013 (w.e.f. 19.11.1986)], and in respect of the power categories 'more than 19 KW upto 75 KW' and 'more than 75 KW upto 800 KW, as specified in the said Table, be effective from 1st July, 2014,] [Inserted by G.S.R. 752(E), dated 24.10.2008 (w.e.f. 24.10.2008).] subject to the general conditions contained therein, namely:-

TABLE

Power Category	EmissionLimits (g/kW-hr)	Smoke Limit(light absorption coefficient, M-1)	
NOx+HC	CO	PM	
Upto 19 KW	_7.5	_3.5	_0.3 _0.7
More than 19 KWupto 75 KW	_4.7	_3.5	_0.3 _0.7
More than 75 KWupto 800 KW	_4.0	_3.5	_0.2 _0.7

Note:

1. The abbreviations used in the Table shall mean as under: NOx - Oxides of Nitrogen; HC - Hydrocarbon; CO - Carbon Monoxide; and PM - Particulate Matter.

2. Smoke shall not exceed above value throughout the operating load points of the test cycle.

3. The testing shall be done as per D2 - 5 mode cycle of ISO: 8178- Part 4.

4. The above mentioned emission limits shall be applicable for Type Approval and Conformity of Production (COP) carried out by authorised agencies.

5. Every manufacturer, importer or, assembler (hereinafter referred to as manufacturer) of the diesel engine (hereinafter referred to as 'engine') for genset application manufactured or imported into India or, diesel genset (hereinafter referred to as 'product'), assembled or imported into India shall obtain Type Approval and comply with COP of their product(s) for the emission limits which shall be valid for the next COP year or, the date of implementation of the revised norms specified above, whichever earlier.

Explanation- The term 'COP year' means the period from 1st April to 31st March.

6. Stack height (in metres), for genset shall be governed as per Central Pollution Control Board (CPCB) guidelines.

General Conditions

1. Applicability - These conditions shall apply to all new engines for genset application and products manufactured, assembled or, imported into India, as the case may be :

Provided that these rules, shall not apply to, -(a)any engine or, product, assembled or manufactured or imported, as the case may be, for the purpose of export outside India, or;(b)any engine or product intended for the purpose of sample limited to four in number and to be exported back within three months, and not for sale in India.

2. Requirement of certification - Every manufacturer of engine or product, as the case may be, shall have valid certificate(s) of Type Approval and COP for each COP year, for all engine models being manufactured or, for all engine or product models being imported, after the effective date for the emission limits, as specified above and the COP for the genset [of the power category 'upto 19KW' sold on or after [1st May, 2015] [Substituted for the words "shall be effective from 1st July, 2014 as specified in the Table below" by Notification No. G.S.R. 789 (E) dated 11.11.2014 (w.e.f. 19.11.1986)] and of the power catogories 'more than 19kW upto 75 KW' and 'more than 75 KW upto 800 KW' sold on or after 1st July, 2014 shall be effective and in force as per revised emission norms with effect from [1st May, 2016] [Substituted for the words "1st January, 2016" by Notification No. G.S.R. 105(E) dated 17.2.2015 (w.e.f. 19.11.1986)] and 1st July, 2015, respectively].

3. Sale, import or use of engine or product not complying with these rules - No person shall sell, import or use an engine for genset application or, a product which is not having a valid Type Approval certificate and certificate of COP referred to in condition 2.

4. Requirement of conformance labeling. - (1) All the engines, individually or as part of the product shall be clearly engraved 'Genset Engine' on the cylinder block.

(2)the engine or the product shall be affixed with a conformance label meeting the following requirements,namely:-(a)the label shall be durable and legible;(b)the label shall be affixed on a part necessary for normal operation of the engine or the product and not normally requiring replacement during the life of the engine or the product.(3)The conformance label shall contain the following information, namely:-(a)name and address of the manufacturer of engine or product, as the case may be;(b)statement that the engine or product conforms to the Environment (Protection) Rules, 1986;(c)Type Approval certificate number;(d)date of manufacture of engine and the product or in case of import, the date of import of the engine and the product; and(e)rated speed and corresponding gross power in kW.

5. Nodal Agency. - (1) The Central Pollution Control Board shall be the nodal agency for implementation of these rules.

(2)In case of any dispute or difficulty in implementation of these rules, the matter shall be referred to the nodal agency.(3)The nodal agency shall constitute a Committee to advise it on all matters, including the disputed matters, related to the implementation of these rules.

6. Authorised agencies for certification. - The following institutions are authorised to carry out such tests as they may deem necessary, for giving certificates of Type Approval and Conformity of Production tests for diesel engines or products and to give such certificates, namely:-

(i)the Automotive Research Association of India, Pune (Maharashtra);(ii)the International Centre for Automotive Technology, Manesar (Haryana);(iii)the Indian Oil Corporation, Research and Development Centre, Faridabad (Haryana);(iv)the Indian Institute of Petroleum, Dehradun (Uttarakhand); and(v)the Vehicle Research Development Establishment, Ahmednagar (Maharashtra).

7. Compliance and testing procedure. - (1) The Compliance and Testing Procedure, as published by the Central Pollution Control Board shall be followed by all concerned.

(2)The authorised agencies for certification shall submit the testing and certification details in respect of the emission to the Central Pollution Control Board annually.

8. Fuel Specification - The specification of commercial fuel applicable for diesel gensets shall be the same as applicable for commercial High Speed Diesel applicable for diesel vehicles in the area where product would be operated, from time to time, as per policy of Government of India.

9. Engine component or parts identification - All the details of engine components or parts responsible for the emission performance shall be clearly marked in English language.]

[Exemption from the Emission Norms for twenty Diesel Gensets of 113.2 kW to be procured by Bharat Electronics Limited for 3D Tactical Control Radar for Indian Army. [Inserted by Notification No. G.S.R. 54 (E) dated 23.1.2015 (w.e.f. 19.11.1986)]The 113.2 kW diesel gensets manufactured by M/s Kirloskar Oil Engine Limited, Pune for the purpose of their use in 3D Tactical Control Radars System for use by the Indian Army shall be exempted from the regulations specified for new diesel engine upto 800 kW for generator set, under this entry, subject to following conditions, namely:-(i)the said gensets would comply with emission norms as existing on 30th June 2013, as per G.S.R. 371(E), dated 17th May, 2002;(ii)the special dispensation for the emission norms shall be only for the diesel gensets, not exceeding twenty in number, to be used in 3D Tactical Control Radars System, with the present design or configuration which shall be procured and used on or before 30th June, 2015;(iii)the General Manager (Radar) and Unit Head, Bharat Electronics Limited, Sahibabad shall ensure and maintain the serial numbers for twenty gensets and shall direct the manufacturer of these generator sets to emboss on the engine and main body of the gensets, the words "For the use of Army only in 3D Tactical Control Radars System".(iv)a register shall be

maintained at the premises of the manufacturer or assembler of gensets and in the Bharat Electronics Limited, Sahibabad to ensure that only twenty diesel gensets of 113.2 kW are manufactured under special dispensation and this exemption shall not be misused elsewhere, for similar or other purpose.][95A. Genset run on dedicated Natural Gas (NG) or Liquid Petroleum Gas (LPG) :-A. Emission Limits. - The emission limits for dedicated NG or LPG driven engine for genset application or genset (upto 800 kW) shall be effective from 1st July, 2016 as specified in the Table below subject to the general conditions contained therein, namely:-Table

Power Category	Emission Limits (g/kW-hr)	
NOX + NMHC Or NOX + RHC	CO	
Upto 19 kW	□7.5	□3.5
More than 19 kW upto 75 kW	□4.7	□3.5
More than 75 kW upto 800 kW	□4.0	□3.5

Notes. - The abbreviations used in the Table shall mean as under: 1. NOX - Oxides of Nitrogen; CO - Carbon Monoxide; NMHC - Non-Methane Hydrocarbon; and RHC - Reactive Hydrocarbon.

2. Dedicated NG or LPG genset engine shall mean a mono-fuel engine starting and operating with only one fuel, i.e., NG or LPG.

3. NOX + NMHC or NOX + RHC shall be measured in case of dedicated NG or LPG genset engine. NMHC shall be equal to 0.3×Total Hydrocarbon (THC) in case of NG, and RHC is equal to 0.5×THC in case of LPG.

4. These norms shall be applicable to Original Equipment Manufacturer (OEM) built dedicated NG or LPG genset engines.

5. The above mentioned emission limits shall be applicable for Type Approval and Conformity of Production (COP) carried out by authorised agencies.

6. Any of the following institutions shall undertake Type Approval and for verification of Conformity of Production for emission standards for engine products and to issue such certificates on compliance of the prescribed norms, namely:-

(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Haryana);(c)The Indian Oil Corporation, Research and Development Centre, Faridabad (Haryana);(d)The Indian Institute of Petroleum, Dehradun (Uttarakhand); and(e)The Vehicle Research Development Establishment, Ahmednagar (Maharashtra).

7. Stack height (in metres), for genset shall be governed as per Central Pollution Control Board (CPCB) guidelines.

B. Noise Limits. - 1. The maximum permissible sound pressure level for genset, with rated capacity upto 800 kW shall be 75 dB(A) at 1 metre from the enclosure surface. Gensets should be provided with integral acoustic enclosure at the manufacturing stage itself. The noise norms shall be effective from the 1st January, 2017.

2. Noise limit for gensets not covered under paragraph (1) shall be as follows:-

(a)Noise from gensets shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end.(b)The acoustic enclosure shall be designed for minimum 25 dB(A) insertion loss or for complying with the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure or acoustic treatment. Under such circumstances the performance may be checked for noise reduction upto actual ambient noise level, preferably, in the night time between 10.00 pm-6.00 am). The measurement for insertion loss may be done at different points at 0.5m from the acoustic enclosure or room, and then averaged.(c)The genset shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A).(d)These limits shall be regulated by the State Pollution Control Boards and the State Pollution Control Committees.(e)The manufacturer shall offer to the user a standard acoustic enclosure of 25 dB(A) insertion loss and also a suitable exhaust muffler with insertion loss of 25 dB(A).(f)The user shall make efforts to bring down the noise levels due to the genset, outside his premises, within the ambient noise requirements by proper siting and control measures.(g)Installation of a genset shall be strictly in compliance with the recommendation of the genset manufacturer.(h)A proper routine and preventive maintenance procedure for the genset shall be set and followed in consultation with the genset manufacturer.

3. Any of the following institutions shall undertake Type Approval and for verification of Conformity of Production for noise norms for dedicated NG or LPG gensets and issue such certificates on compliance of the prescribed norms, namely :-

(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Haryana);(c)The Fluid Control Research Institute, Palghat (Kerala);(d)The National Test House, Ghaziabad (Uttar Pradesh);(e)The National Aerospace Laboratory, Bangaluru (Karnataka); and(f)The Naval Science and Technology Laboratory, Visakhapatnam (Andhra Pradesh).(g)[National Physical Laboratory, New Delhi.]C. General Conditions. - 1. Every manufacturer, importer or assembler (hereinafter referred to as the 'manufacturer') of the dedicated NG or LPG engine (hereinafter referred to as 'engine') for genset application manufactured or imported into India or dedicated NG or LPG genset (hereinafter referred to as 'product'), assembled or imported into India shall obtain Type Approval and comply with the COP of their products for the emission limits which shall be valid for the next COP year or,

the date of implementation of the norms specified above, whichever is earlier. Thereafter, the manufacturer shall obtain COP approval every COP year. NG or LPG kit shall also have independent Type Approval and shall independently comply with COP requirement, as and when notified.

2. These conditions shall apply to all new engines for genset application and products manufactured, assembled or imported into India, as the case may be:

Provided that these rules, shall not apply to, -(a)any engine or, product, assembled or manufactured or imported, as the case may be, for the purpose of export outside India; or(b)any engine or product intended for the purpose of sample limited to four in number and to be exported back within three months, and not for sale in India.

3. Every manufacturer of engine or product, as the case may be, shall have valid certificates of Type Approval and COP for each COP year, for all engine models being manufactured or, for all engine or product models being imported, after the effective date of the emission limits, as specified above and CPCB shall develop system and procedure to monitor the norms and COP year.

4. Every manufacturer shall submit its engine or products, as the case may be, for the verification for conformity of production for emission and noise, by any of the institutions, as applicable, every COP year.

Note. - The term COP year, duty cycle and any other requirement for compliance of Type Approval and COP shall be prescribed in the system and procedure to be developed by the Central Pollution Control Board.

5. No person shall manufacture, sell, import or use an engine for genset application or any product which is not having a valid Type Approval certificate and certificate of COP referred to in sub - paragraph (3) above, as applicable.

6. All the engines, individually or as part of the product shall be clearly engraved as NG genset Engine or LPG genset engine on the cylinder block, as the case may be.

7. The engine or the product shall be affixed with a conformance label meeting the following requirements, namely:-

(a)the label shall be durable and legible;(b)the label shall be affixed on a part necessary for normal operation of the engine or the product and not normally requiring replacement during the life of the engine or the product.

8. The conformance label shall contain the following information, namely:-

(a)Name and address of the manufacturer of engine or product, as the case may be;(b)Statement that the engine or product conforms to the Environment (Protection) Rules, 1986;(c)Type Approval Certificate number;(d)Date of manufacture of engine and the product or in case of import, the date of import of the engine and the product; and(e)Rated speed and corresponding gross power in kW.

9. (a) The Central Pollution Control Board shall be the nodal agency for implementation of these rules.

(b)In case of any dispute or difficulty in implementation or these rules, the matter shall be referred to the nodal agency.(c)The nodal agency shall constitute a Standing Committee for emission related issues and a National Committee for noise related issues, respectively, to advise it on all matters related to the implementation of these rules including disputes, if any.

10. (a) All genset engines operating on dedicated NG or LPG shall be tested for Type Approval and COP of emission and noise limits compliance as per system and procedure published from time to time by the Central Pollution Control Board.

(b)The Central Pollution Control Board may develop or as the case may be, revise the compliance and testing procedure allowing a time of six months for all concern.(c)The institutes referred to in paragraph A and B above shall submit the testing and certification details in respect of emission and, or, noise, as applicable, to the Central Pollution Control Board, annually and the Central Pollution Control Board shall be free to depute its officials to oversee the testing.

11. All genset engines operating on dedicated NG or LPG shall comply safety requirements.

12. The specification of commercial fuel applicable for NG or LPG shall be applicable for vehicles run on NG or LPG in the area where product shall be operated, from time to time, as per policy of Government of India.

13. All the details of engine components or part responsible for the emission performance shall be clearly marked in English language.

95B. Genset run on Petrol and Natural Gas (NG) or Petrol and Liquid Petroleum Gas (LPG):-

A. Emission Limits. - The emission limits for Petrol and NG or Petrol and LPG genset (upto 19 kW) powered by SI engine (upto 400 cc displacement) (hereinafter referred to as Genset) shall be effective from the 1st August, 2016 as specified in the following Table:-Table

Class	Engine Displacement (cc)	CO (g/kWh)	NOX + THC/ NOX + NMHC/ NOX + RHC (g/kWh)
1.	Upto 99	□250	□12
2.	99 and upto 225	□250	□10
3.	□225□400	□250	□8

Notes. - The abbreviations used in above table shall mean as under: 1. SI - Spark Ignition, NG - Natural Gas, LPG - Liquid Petroleum Gas, NOX - Oxides of Nitrogen, THC - Total Hydrocarbon, CO - Carbon Monoxide, NMHC - Non- Methane Hydrocarbon and RHC - Reactive Hydrocarbon.

2. Dual fuel engine operation shall mean a two - fuel system having petrol as a primary combustion fuel and NG or LPG as supplementary fuel, both in a certain proportion, throughout the engine operating zone. Such dual fuel Genset engine may operate on petrol stand-alone mode in absence of gaseous fuel i.e. NG or LPG.

3. NMHC shall be equal to 0.3×THC in case of Natural Gas and RHC shall be equal to 0.5×THC in case of LPG.

4. These norms shall be applicable to Original Equipment Manufacturer (OEM) built petrol and NG or petrol and LPG genset (upto 19 kW) powered by SI engine (upto 400 cc displacement). Conversion or Retrofitment of the existing petrol or Kerosene generator sets to run on petrol and NG or petrol and LPG shall not be permitted.

5. The above emission limits shall be applicable for Type Approval and Conformity of Production (COP) undertaken by authorized agencies and shall be complied with petrol alone or petrol and NG or LPG fuel mode separately.

6. Any of the following institutions shall undertake Type Approval and for verification of Conformity of Production for emission standards for engine products and to issue such certificates on compliance of the prescribed norms, namely:-

(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Haryana);(c)The Indian Oil Corporation, Research and Development Centre, Faridabad (Haryana);(d)The Indian Institute of Petroleum, Dehradun (Uttarakhand); and(e)The Vehicle Research Development Establishment, Ahmednagar (Maharashtra).

7. NOX + THC shall be measured as emissions from petrol alone in bi-fuel fuel mode of operation. NOX + NMHC or NOX +RHC shall be measured in case of petrol and NG or petrol and LPG fuel mode of operation, respectively.

B. Noise Limits. - 1. The noise limit for gensets (upto 19 kW) powered by an SI engine (upto 400 cc displacement) run on petrol and NG or petrol and LPG shall be effective from the 1st September, 2016 as specified in the following table :-Table

Noise Parameter	Noise Limits
Sound Power Levelwa	86 dB(A)

2. Any of the following institutions shall undertake Type Approval and for verification of Conformity of Production for noise norms for dedicated petrol or petrol and NG or LPG gensets and issue such certificates on compliance of the prescribed norms, namely :-

(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Haryana);(c)The Fluid Control Research Institute, Palghat (Kerala);(d)The National Test House, Ghaziabad (Uttar Pradesh);(e)The National Aerospace Laboratory, Bangaluru (Karnataka); and(f)The Naval Science and Technology Laboratory, Visakhapatnam (Andhra Pradesh).(g)[National Physical Laboratory, New Delhi.] [Inserted by Notification No G.S.R. 97(E), dated 29.1.2018 (w.e.f. 19.11.1986).]C. General Conditions. - 1. Every manufacturer, importer or assembler (hereinafter referred to as the 'manufacturer') of the petrol and NG or LPG engine (hereinafter referred to as 'engine') for genset application manufactured or imported into India or petrol and NG or LPG genset (hereinafter referred to as 'product'), assembled or imported into India shall obtain Type Approval and comply with the COP of their products for the emission limits which shall be valid for the next COP year or, the date of implementation of the norms specified above, whichever is earlier. Thereafter, the manufacturer shall obtain COP approval every COP year. Petrol and NG or LPG kit shall also have independent Type Approval and shall independently comply with COP requirement, as and when notified.

2. These conditions shall apply to all new engines for genset application and products manufactured, assembled or imported into India, as the case may be:

Provided that these rules, shall not apply to, -(a)any engine or, product, assembled or manufactured or imported, as the case may be, for the purpose of export outside India; or(b)any engine or product intended for the purpose of sample limited to four in number and to be exported back within three months, and not for sale in India.

3. Every manufacturer of engine or product, as the case may be, shall have valid certificates of Type Approval and COP for each COP year, for all engine models being manufactured or, for all engine or product models being imported, after the effective date of the emission limits, as specified above and CPCB shall develop system and procedure to monitor the norms and COP year.

4. Every manufacturer shall submit its engines or products to the verification for conformity of production for emission and noise, by any of the institutions, as applicable, every COP year.

Note. - The term 'COP year', duty cycle and any other requirement for compliance of Type Approval and COP to be prescribed in the System and Procedure developed by the Central pollution Control Board.

5. No person shall manufacture, sell, import or use an engine for genset application or any product which is not having a valid Type Approval certificate and certificate of COP referred to in sub - paragraph (3) above, as applicable.

6. All the engines, individually or as part of the product shall be clearly engraved as petrol and NG genset Engine or petrol and LPG genset engine on the cylinder block, as the case may be.

7. The engine or the product shall be affixed with a conformance label meeting the following requirements, namely:-

(a)the label shall be durable and legible;(b)the label shall be affixed on a part necessary for normal operation of the engine or the product and not normally requiring replacement during the life of the engine or the product.

8. The conformance label shall contain the following information, namely:-

(a)Name and address of the manufacturer of engine or product, as the case may be;(b)Statement that the engine or product conforms to the Environment (Protection) Rules, 1986;(c)Type Approval Certificate number;(d)Date of manufacture of engine and the product or in case of import, the date of import of the engine and the product; and(e)Rated speed and corresponding gross power in kW.

9. (a) The Central Pollution Control Board shall be the nodal agency for implementation of these rules.

(b)In case of any dispute or difficulty in implementation or these rules, the matter shall be referred to the nodal agency.(c)The nodal agency shall constitute a Standing Committee for emission related issues and a National Committee for noise related issues, respectively, to advise it on all matters related to the implementation of these rules including disputes, if any.

10. (a) All genset engines operating on petrol and NG or LPG shall be tested for Type Approval and COP of emission and noise limits compliance as per system and procedure published from time to time by the Central Pollution Control Board.

(b)The Central Pollution Control Board may develop or as the case may be, revise the compliance and testing procedure allowing a time of six months for all concern.(c)The institutes referred to in paragraph A and B above shall submit the testing and certification details in respect of emission and, or, noise, as applicable, to the Central Pollution Control Board, annually and the Central Pollution Control Board shall be free to depute its officials to oversee the testing.

11. All genset engines operating on petrol and NG or LPG shall comply safety requirements.

12. The specification of commercial fuel applicable for petrol and NG or LPG shall be applicable for vehicles run on petrol and NG or LPG in the area where product shall be operated, from time to time, as per policy of Government of India.

13. All the details of engine components or part responsible for the emission performance shall be clearly marked in English language.

95C. Genset run on Diesel and Natural Gas (NG) or Diesel and Liquid Petroleum Gas (LPG) :-

A. Emission Limits. - The emission limits for Diesel and NG or Diesel and LPG driven engine (upto 800 kW) for generator set (hereinafter referred to as Genset) application shall be effective from the 1st July, 2016 as specified in the Table below, subject to the general conditions specified therein, namely:-Table

Power Category	Emission Limits (g/kW-hr)		Smoke Limit (light absorption coefficient,m-1)	
NOX + THC or NOX + NMHCor RHC	CO	PM		
Upto 19 kW	□7.5	□3.5	□ 0.3	□ 0.7
More than 19 kW upto 75 kW	□4.7	□3.5	□ 0.3	□ 0.7
More than 75 kW upto 800 kW	□4.0	□3.5	□ 0.2	□ 0.7

Notes. - The abbreviations used in the Table shall mean as under: 1. NOX - Oxides of Nitrogen; THC - Total Hydrocarbon; CO- Carbon Monoxide; PM - Particulate Matter; NMHC - Non - Methane Hydrocarbon; and RHC - Reactive Hydrocarbon.

2. Dual fuel engine operation shall mean a two - fuel system having diesel as a primary combustion fuel and NG or LPG as supplementary fuel, both in a certain proportion, throughout the engine operating zone. Such dual fuel genset engine may operate on diesel stand-alone mode in absence of gaseous fuel i.e. NG or LPG.

3. NOX + THC shall be measured as emission while diesel alone is used as fuel. NOX + NMHC or NOX + RHC shall be measured in case of diesel and NG or diesel and LPG dual fuel operation respectively. NMHC shall be equal to 0.3 × THC in case of NG and RHC as 0.5 × THC in case of LPG.

4. These norms shall be applicable to Original Equipment Manufacturer (OEM) built diesel and NG or LPG Genset engines. Conversion or retro fitment of the existing diesel engines to run on diesel and NG or diesel and LPG shall not be permitted.

5. The above mentioned emission limits shall be applicable for Type Approval and Conformity of Production (COP) carried out by authorised agencies. For Type Approval and COP for diesel and NG or diesel and LPG dual fuel operation engines, the emission and smoke limits prescribed in above Table shall be met in diesel alone or diesel and NG or diesel and LPG

dual fuel mode separately.

6. Any of the following institutions shall undertake Type Approval and for verification of Conformity of Production for emission standards for engine products and to issue such certificates on compliance of the prescribed norms, namely:-

(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Haryana);(c)The Indian Oil Corporation, Research and Development Centre, Faridabad (Haryana);(d)The Indian Institute of Petroleum, Dehradun (Uttarakhand); and(e)The Vehicle Research Development Establishment, Ahmednagar (Maharashtra).

7. Stack height (in metres) for genset shall be governed as per Central Pollution Control Board (CPCB) guidelines.

8. NOX + THC shall be measured as emissions from diesel alone in bi-fuel fuel mode of operation. NOX + NMHC or NOX +RHC shall be measured in case of diesel and NG or diesel and LPG fuel mode of operation, respectively.

9. The emission standards for smoke and particulate matter shall be applicable, when diesel is used as fuel. Smoke limit prescribed in above Table shall not exceed throughout the operating load points of the test cycle.

B. Noise Limits. - 1. The maximum permissible sound pressure level for genset, with rated capacity upto 800 kW shall be 75 dB(A) at 1 metre from the enclosure surface. Gensets shall be provided with integral acoustic enclosure at the manufacturing stage itself. The noise norms shall be effective from the 1st January, 2017.

2. Noise limit for gensets not covered under paragraph (1) shall be as follows:-

(a)Noise from gensets shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end.(b)The acoustic enclosure shall be designed for minimum 25 dB(A) insertion loss or for complying with the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure or acoustic treatment. Under such circumstances the performance may be checked for noise reduction upto actual ambient noise level, preferably, in the night time between 10.00 PM-6.00 AM). The measurement for insertion loss may be done at different points at 0.5m from the acoustic enclosure or room, and then averaged.(c)The genset shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A).(d)These limits shall be regulated by the

State Pollution Control Boards and Pollution Control Committees.(e)The manufacturer shall offer to the user a standard acoustic enclosure of 25 dB(A) insertion loss and also a suitable exhaust muffler with insertion loss of 25 dB(A).(f)The user shall make efforts to bring down the noise levels due to the genset, outside his premises, within the ambient noise requirements by proper siting and control measures.(g)Installation of a genset shall be strictly made in compliance with the recommendations of the genset manufacturer.(h)A proper routine and preventive maintenance procedure for the genset shall be set and followed in consultation with the genset manufacturer.

3. Any of the following institutions shall undertake Type Approval and for verification of Conformity of Production for noise norms for dedicated diesel or diesel and NG or LPG gensets and issue such certificates on compliance of the prescribed norms, namely :-

(a)The Automotive Research Association of India, Pune (Maharashtra);(b)The International Centre for Automotive Technology, Manesar (Haryana);(c)The Fluid Control Research Institute, Palghat (Kerala);(d)The National Test House, Ghaziabad (Uttar Pradesh);(e)The National Aerospace Laboratory, Bangaluru (Karnataka); and(f)The Naval Science and Technology Laboratory, Visakhapatnam (Andhra Pradesh).(g)[National Physical Laboratory, New Delhi.] [Inserted by Notification No G.S.R. 97(E), dated 29.1.2018 (w.e.f. 19.11.1986).]C. General Conditions. - 1. Every manufacturer, importer or assembler (hereinafter referred to as the 'manufacturer') of the diesel and NG or LPG engine (hereinafter referred to as 'engine') for genset application manufactured or imported into India or diesel and NG or LPG genset (hereinafter referred to as 'product'), assembled or imported into India shall obtain Type Approval and comply with the COP of their products for the emission limits which shall be valid for the next COP year or, the date of implementation of the norms specified above, whichever is earlier. Thereafter, manufacturer shall obtain COP approval every COP year. Diesel and NG or LPG kit shall also have independent Type Approval and shall independently comply with COP requirement, as and when notified.

2. These conditions shall apply to all new engines for genset application and products manufactured, assembled or imported into India, as the case may be:

Provided that these rules, shall not apply to, -(a)any engine or, product, assembled or manufactured or imported, as the case may be, for the purpose of export outside India; or(b)any engine or product intended for the purpose of sample limited to four in number and to be exported back within three months, and not for sale in India.

3. Every manufacturer of engine or product, as the case may be, shall have valid certificates of Type Approval and COP for each COP year, for all engine models being manufactured or, for all engine or product models being imported, after the effective date of the emission limits, as specified above and CPCB shall develop system and procedure to monitor the norms and

COP year.

4. Every manufacturer shall submit its engine or products, as the case may be, for the verification of conformity of production for emission and noise, by any of the institutions, as applicable, every COP year.

Note. - The term COP year, duty cycle and any other requirement for compliance of Type Approval and COP shall be prescribed in the system and procedure to be developed by the Central Pollution Control Board.

5. No person shall manufacture, sell, import or use an engine for genset application or any product which is not having a valid Type Approval certificate and certificate of COP referred to in sub - paragraph (3) above.

6. All the engines, individually or as part of the product shall be clearly engraved as diesel and NG genset Engine or diesel and LPG genset engine on the cylinder block, as the case may be.

7. The engine or the product shall be affixed with a conformance label meeting the following requirements, namely:-

(a)the label shall be durable and legible;(b)the label shall be affixed on a part necessary for normal operation of the engine or the product and not normally requiring replacement during the life of the engine or the product.

8. The conformance label shall contain the following informations, namely:-

(a)Name and address of the manufacturer of engine or product, as the case may be;(b)Statement that the engine or product conforms to the Environment (Protection) Rules, 1986;(c)Type Approval Certificate number;(d)Date of manufacture of engine and the product or in case of import, the date of import of the engine and the product; and(e)Rated speed and corresponding gross power in kW.

9. (a) The Central Pollution Control Board shall be the nodal agency for implementation of these rules;

(b)In case of any dispute or difficulty in implementation of these rules, the matter shall be referred to the nodal agency;(c)The nodal agency shall constitute a Standing Committee for emission related issues and a National Committee for noise related issues, respectively, to advise it on all matters related to the implementation of these rules including disputes, if any.

10. (a) All genset engines operating on diesel and NG or LPG shall be tested for Type Approval and COP of emission and noise limits compliance as per system and procedure published from time to time by the Central Pollution Control Board.

(b)The Central Pollution Control Board may develop or as the case may be, revise the compliance and testing procedure allowing a time for a period of six months for all concern.(c)The institutes referred to in paragraph A and B above shall submit the testing and certification details in respect of emission and, or, noise, as applicable, to the Central Pollution Control Board, annually and the Central Pollution Control Board shall be free to depute its officials to oversee the testing.

11. All genset engines operating on diesel and NG or LPG shall comply safety requirements.

12. The specification of commercial fuel applicable for diesel and NG or LPG shall be applicable for vehicles run on diesel and NG or LPG in the area where product shall be operated, from time to time, as per the policy of the Government of India.

13. All the details of engine components or part responsible for the emission performance shall be clearly marked in English language.] [Inserted by Notification No. G.S.R. 281(E), dated 7.3.2016 (w.e.f. 19.11.1986).]

96. [[Inserted by G.S.R. 489(E), dated 9.7.2002 (w.e.f. 11.7.2002).] Emission Standards for Diesel Engines (Engine rating more than 0.8 MW (800 KW) for Power Plant, Generator Set Applications and other Requirements.] [Inserted by G.S.R. 640(E), dated 16.10.2006 (w.e.f. 16.10.2006).]

TABLE

Parameter	Area Category	Total engine rating of the plant (includes existing as well as new generator sets)	Generator sets commissioning date		
			Before 1-7-2003	Between 1-7-2003 and 1-7-2005	On or after 1-7-2005

NOx(as NO2) (at 15% 02), dry basis, in ppmv	A	Upto 75 MW	1100	970	710
	B	Upto 150 MW			
	A	More than 75 MW	1100	710	360
	B	More than 150 MW			
NMHC (as C) (at 15% O2), mg/Nm3	Both A and B		150	100	
PM (at 15% 02), mg/Nm3	Diesel Fuels-HSD and LDO	Both A and B	75	75	
	Furnace Oils-LSHS and FO	Both A and B	150	100	
CO (at 15% O2), mg/Nm3Both A and B	150	150			
Sulphurcontent in fuel	A	2%			
	B	4%			
Fuel specification	For A only	Upto5 MW	Only Diesel Fuels (HSD, LDO) shall be used.		
Stack height (for generator sets commissioned after 1-7-2003)	Stack height shall be maximum of the following, in metre:				
(i) 14 Q0.3, Q=Total SO2emission from the plant in kg /hr.					
(ii) Minimum 6 m. above the building where generator set is installed,					
(iii) 30 m.					
Note.-					
1. Acronyms used:					

MW .	Mega (106) Watt	FO	Furnace Oil
NOx	Oxides of Nitrogen	HSD	High Speed Diesel
NO2	Nitrogen Dioxide	LDO	Light Diesel Oil
O2	Oxygen	LSHS	LowSulphurHeavy Stock
NMHC	Non-Methane Hydrocarbon	kPa	Kilo Pascal
C	Carbon	mm	Milli(10-3) metre
PM	Particulate Matter	kg/hr	Kilo (103) gram per hour
CO	Carbon Monoxide	mg/Nm3	Milli(10-3) gram per normal metre cubic
SO2ppmv	SulphurDioxide part per million (106) by volume		

2. Area categories A and B are defined as follows:

Category A: Areas within the municipal limits of towns/cities having population more than 10 lakhs and also upto 5 km beyond the municipal limits of such town/cities.Category B: Areas not covered by category A.

3. The standards shall be regulated by the State Pollution Control Boards or Pollution Control Committees, as the case may be.

4. Individual units with engine ratings less than or equal to 800 KW are not covered by this notification.

5. Only following liquid fuels, viz., High Speed Diesel, Light Diesel Oil, Low Sulphur Heavy Stock and Furnace Oil or liquid fuels with equivalent specifications shall be used in these power plants and generator sets.

6. For expansion project, stack height of new generator sets shall be as per total Sulphur Dioxide emission (including existing as well as additional load).

7. For multi-engine plants, fuels shall be grouped in cluster to get better plume rise and dispersion. Provision for any future expansion should be made in planning stage itself.

8. Particulate matter, Non-Metharie Hydrocarbon and Carbon Monoxide results are to be normalised to 25°C, 1.01 Kilo Pascal (760 mm of mercury) pressure and zero percent moisture (dry basis).

9. Measurement shall be performed at steady load conditions of more than 85% of the rated load.

10. Continuous monitoring of Oxides of Nitrogen shall be done by the plants whose total engine capacity is more than 50 Mega Watt. However, minimum once in six month monitoring for other parameters shall be adopted by the plants.

11. Following methods may adopted for the measurement of emission parameters,-

Sl. No.	Emissionparameters	Measurement methods	
1.	Particulates	Gravimetric	
2.	SO2	Barium Perchlorate-Thorin indicator method	
3.	NOx	Chemiluminescence, Non-Dispersive Infra Red, Non-Dispersive Ultraviolet (for continuous measurement), Phenol disulphonic method	
4.	CO	Non-Dispersive Infra Red	
5.	O2	Paramagnetic, Electrochemical sensor	
6.	NMHC	Gas Chromatograph-Flame lonisation Detector].	
97. [] [Added by G.S.R. 546(E), dated 30.8.2005 (w.e.f. 30.8.2005).]	Boilers Using Agriculture Waste as Fuel	Step Great Particulate matter	250mg/Nm3
		Horse Shoe/Pulsating	500mg/Nm3
		Particulate matter	(12%of C02)
		Spreader stroker	500mg/Nm3
		Particulate matter	(12%of C02);

98. Guidelines for Pollution Control in Ginning Mills.-

Measures for Noise Control-(i)Creating separate soundproof enclosures for the fans within the ginning area(ii)Keeping the fans outside the ginning room in separate enclosures(iii)Roller gins may be covered by sound proof enclosures and use of pneumatic feeding of raw cotton while suction of ginned cotton is introduced to considerably reduce the dust pollution levelMeasures for Dust Control-(i)The fugitive emission can be largely controlled by employing mechanical or pneumatic handling of raw material and ginned material through covered ducts and providing overhead hoods connected to exhaust through ducts and filters; use of lifting platforms for bale formers(ii)The

overhead hoods with exhaust arrangement can be provided at:(a)The saw-ginning machine where manual handling to maintain proper feeding in the machine(b)At the feeding point of the roller ginning machine when manual feeding is carried out(c)At the collection points of ginned cotton from saw ginning condenser.

	Sl. No.	Industry	Parameter	Standards
	1	2	3	4
99. []	Sponge IronPlant (Rotary Kiln)		A. EmissionStandards*	
		Particulatematter	Fuel Type	Limitingvalue fo concentration
			coal	100 mg/Nm3
			gas	50 mg/Nm3
		CarbonMonoxide (Vol./Vol.)	coal/gas	1%
		StackHeight** (minimum)	coal/gas	30.0m
		Note.-*Emissionshall be normalised at 12% CO2in stack emission.		
		**Stackheight shall be calculated as H=14.0Q0.3where Q isemission of Sulphur Dioxide (SO2) in kg. /hr. i.e.		
		SO2(kg/hr)	Height(metre)	
		up to 12.68	30	
		12.69-33.08	40	
		33.09-69.06	50	
		69.07-127.80	60	
		127.81-213.63	70	
	(De-dustingunit)	Particulatematter	Existing unit	New unit
		mg/Nm3	100	50
		Note. -(i) Stack attached to de-dusting unit shall have minimum heightof 30.0 metre.		
		(ii) If,De-dusting unit is connected to After Burner		

	Chamber (ABC),emission shall be emitted through common stack (minimum height30.0 metre) having separate arrangements for emission monitoringfor de-dusting unit.		
		B. FugitiveEmission Standards	
Rotary Kiln/De-dusting unit	Particulatematter	Existing unit	New unit
	(µg/m3)	3000	2000
	Note.-(i) The existing industry shall comply with a standard of 2000(µg/m3) after one year from the date ofnotification.		
	(ii) Fugitiveemission shall be monitored at a distance 10.0 metre from thesource of fugitive emission as per following:		
	Area	Monitoringlocation	
	Raw materialhandling area	Wagontippler, Screen area, Transfer points, Stock bin area	
	Crusherarea	Crushingplant, Vibrating screen, Transfer points	
	Raw materialfeed area	Feeder area,Mixing area, Transfer points	
	Coolerdischarge area	Oversizedischarge area, Transfer points, Intermediate stock bin area,Screening plant, Magnetic separation unit, Transfer points,	

			Oversize discharge area, Product separation area, Bagging area	
		Productprocessing area	Intermediatestock bin area, Screening plant, Magnetic separation unit,Transfer points, Over size discharge area, Product separationarea, Bagging area	
		Other areas	As specifiedby State Pollution Control Board/Pollution Control Committee	
			C. EffluentStandards	
		pH	5.5-9.0	
		Totalsuspended solids	100 mg/1	
		Oil andgrease	10mg/1	
		Chemicaloxygen demand	250 mg/1	
		Note.-(i) All efforts shall be made to reuse and re-circulate the waterand to maintain "Zero discharge".		
		(ii) Stormwater drain shall be provided within the premises of the industryso as to avoid mixing with effluent.		
100. []	CommonHazardous Waste Incinerator		A. EmissionLimiting concentration in mg/Nm3, unless stated	SamplingDurati in (minutes) un stated
		ParticulateMatter	50	30
		HCI	50	30
		SO2	200	30
		CO	100	30
			50	24 hours

Total OrganicCarbon	20	30
HF	4	30
NOx (NO andNO2expressed as NO2)	400	30
Total dioxinsand furans	0.1 ngTEQ/Nm3	8 hours
Cd+Th+theircompounds	0.05	2 hours
Hg and itscompounds	0.05	2 hours
Sb+As+Pb+Co+Cr+Cu+Mn+Ni+V+their compounds	0.50	2 hours

Notes. -

(i) Allmonitored values shall be corrected to 11% oxygen on dry basis.

(ii) The CO2concentration in tail gas shall not be less than 7%.

(iii) Incase, halogenated organic waste is less than 1% by weight ininput waste, all the facilities in twin chamber incineratorsshall be designed to achieve a minimum temperature of 950°Cin secondary combustion chamber and with a gas residence time insecondary combustion chamber not less than 2 (two) seconds.

(iv) In casehalogenated organic waste is more than 1% by weight in inputwaste, waste shall be incinerated only in twin chamberincinerators and all the facilities shall be designed to achievea minimum temperature of 1100°C in secondary

		combustionchamber with a gas residence time in secondary combustion chambernot less than 2 (two seconds).		
		(v)incineration plants shall be operated (combustion chambers) withsuch temperature, retention time and turbulence, as to achieveTotal Organic Carbon (TOC) content in the slag and bottom ashesless than 3%, or their loss on ignition is less than 5% of thedry weight.		
101. []	Incineratorfor Pesticide Industry			A. EmissionLimiti concentration i mg/Nm3, unles stated
		ParticulateMatter		50
		HCL		50
		SO2		200
		CO		100
		Total OrganicCarbon		20
		Total Dioxinsand Furans*	ExistingIncinerator	0.2 ngTEQ/Nm
			NewIncinerator	0.1 ngTEQ/Nm
		Sb + As + Pb+ Cr + Co + Cu + Mn + Ni + V + their compounds		1.5
		*The existingplant shall comply with norms for dioxins and furans as 0.1ng/TEQ/Nm3within a period of five years from the dateof publication of this notification.		
		Notes.-		

(i) Allmonitored values shall be corrected to 11% oxygen on dry basis.

(ii) The CO2concentration in tail gas shall not be less than 7%.

(iii) Incase, halogenated organic waste is less than 1% by weight ininput waste, all the facilities in single chamber incineratorsshall be designed so as to achieve a minimum temperature of1100°C, in the incinerator. For fluidized bed technologyIncinerator, temperature shall be maintained at 950°C.

(iv) In casehalogenated organic waste is more than 1% by weight in inputwaste, waste shall be incinerated only in twin chamberincinerators and all the facilities shall be designed to achievea minimum temperature of 1100°C in secondary combustionchamber with a gas residence time in secondary combustion chambernot less than two seconds.

(v) Scrubbermeant for scrubbing emissions shall not be used as quencher.

(vi)Incineration plants shall be operated (combustion chambers) withsuch temperature,

		retention time and turbulence, as to achieveTotal Organic Carbon (TOC) content in the slag and bottom ashesless than 3%, and their loss on ignition is less than 5% of thedry weight. (vii) Theincinerators shall have a chimney of atleast thirty metre height. B. Wastewater (i)Wastewater (scrubber water and floor washings) shall bedischarged into receiving water conforming to the normsprescribed under Schedule VI: General Standards for Discharge ofEnvironment Pollutions (Part A: Effluents) notified under theEnvironment (Protection) Rules, 1986. (ii) Thebuilt up in Total Dissolved Solids (TDS) in wastewater of floorwashings shall not exceed 1000 mg/l over and above the TDS of rawwater used.		
102. []	RefractoryIndustry	A. EmissionStandards		
		(Q Down DraftKiln (Fuel: Coal)	Category*	Limitingconcen (mg/Nm3)
		Particulatematter	small/medium/large	350
				Minimum(metr
		Stack height	small	15
			medium	18
			large	21

(ii) Otherthan Down Draft Kiln (Fuel: Coal)		
	Category*	Limitingconcen (mg/Nm3)
ParticulateMatter	small	300
	medium	200
	large	150
		Minimum(metr
Stack height	small	15
	medium	18
	large	21
(iii) Box,Tunnel, Down Draft Kiln, etc. (Fuel: Natural Gas/Producer Gas/LPGor a combination of Fuels/Furnance Oil as Secondary Fuel)		
	Category*	Limitingconcen (mg/Nm3)
ParticulateMatter	small	200
	Medium/ large	150
		Minimum(metr
Stack height	small	12
	medium	15
	large	18
	Category*	Production(tpa)
	small kiln	15,000
	medium kiln	15,001-50,000
	large kiln	above 50,000
(iv) RotaryKiln (Fuel: Furnance Oil)		
	Category**	Limitingconcen (mg/Nm3)
ParticulateMatter	small	200
	Medium/ large	150
		Minimum(metr

Stack height	small	35
	medium	45
	large	60
	Category**	Production(tpa)
	small rotarykiln	50
	medium rotarykiln	51-100
	large rotarykiln	above 100

Notes.-

(i) Allvalues of particulate matter are to be corrected at 6 per centCarbon Dioxide.

(ii) Fugitiveemission shall not exceed 10 mg/m3from any process orplant.

(iii) Eachstack shall be at least 2 metre above the top most point of thebuilding, shed or plant in the industry excluding bucketelevator, mill house and vibrating screen.

(iv) If morethan one kiln is connected to single stack, sum of the productioncapacity of all the kilns would be considered for determining thecapacity of the kiln and accordingly depending upon the totalcapacity, emission standard and stack height would beimplemented.

(v)Monitoring of stack shall be carried out at the time of chargingand after the completion of charging and average of

		these tworesults shall be considered as emission level.		
		B. EffluentStandards		
		Limitingvalue for concentration		
			InlandSurface Water	PublicSewer
		pH	5.5to 9.0	5.5to 9.0
		Oil andGrease	10	20
		BOD 3 days,27oC	30	250
		COD	250	-
		SuspendedSolids	100	600
		Phenols	1.0	5.0
		Cyanide as CN	0.2	2.0
		Cr(Hexavalent)	0.1	2.0
		Cr (Total)	2.0	2.0
			[***]	
103. []	Cashew SeedProcessing Industry	A-Emission Standards		
	Process	Limitingconcentration (mg/Nm3)		
Particulatematter	Roasting	250		
Cooking(roasted shell/deoiled cake as fuel)	150			
Borma OvenHeater (roasted shell/ deoiled cake as fuel)	150			
Stack height		minimum(metres)		
	Roasting	20		
	Cooking	15		
	Borma OvenHeater	15		
Note:Allvalues of particulate matter shall be corrected at 4% CarbonDioxideEachstack shall be at least 2				

metres above the top most point of thebuilding, shed or plant in the industry.Theemissions from 'Dog-house' shall be channelised alongwithRoasting-drum emissions and shall pass through wet scrubberBio-gasifiershall be installed if roasted shells are used as fuel in theunit.

B-Effluentstandards

	Limitingconcentration in mg/l, except for pH		
	Inlandsurface Water	Publicsewer	LandFor Irrigation
pH	6.5to 8.5	6.5to 8.5	6.5to 8.5
OilGrease	10	20	10
BOD 3 days,270c	30	250	100
SuspendedSolids	100	600	200
Phenols	1	5	

Sl. No.	Industry	Parameters	Standards	
1	2	3	4	
		Effluent discharge standards (applicable to all mode ofdisposal)		
105. [[Inserted by Notification No. G.S.R. 1265(E), dated 13.10.2017 (w.e.f. 19.11.1986).]	Sewage Treatment Plants (STPs)		Location	Concentration not to exceed
(a)	(b)			
pH	Anywhere in the country	6.5-9.0		
Bio-Chemical Oxygen Demand (BOD)	Metro Cities*, all State Capitals	20		

	except in theState of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram,Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammuand Kashmir, and Union territory of Andaman and Nicobar Islands,Dadar and Nagar Haveli Daman and Diu and Lakshadweep	
Areas/regions other than mentioned above		30
Total Suspended Solids (TSS)	Metro Cities*, all State Capitals except in theState of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram,Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammuand Kashmir and Union territory of Andaman and Nicobar Islands,Dadar and Nagar Haveli Daman and Diu and Lakshadweep	50
Areas/regions other than mentioned		100

above

Fecal Coliform (FC) (Most Probable Number per100 milliliter, MPN/100ml	Anywhere in the country	1000

*Metro Cities areMumbai, Delhi, Kolkata, Chennai, Bengaluru, Hyderabad, Ahmedabadand Pune.Note:(i) All values inmg/l except for pH and Fecal Coliform.(ii) These standardsshall be applicable for discharge into water bodies as well asfor land disposal/applications.(iii) The standardsfor Fecal Coliform shall not apply in respect of use of treatedeffluent for industrial purposes.(iv) These Standardsshall apply to all STPs to be commissioned on or after the 1stJune, 2019 and the old/existing STPs shall achieve thesestandards within a period of five years from date of publicationof this notification in the Official Gazette.(v) In case ofdischarge of treated effluent into sea, it shall be throughproper marine outfall and the existing shore discharge shall beconverted to marine outfalls, and in cases where the marineoutfall provides a minimum initial dilution of 150 times at thepoint of discharge and a minimum dilution of 1500 times at apoint 100 meters away from discharge point, then, the existingnorms shall apply as specified in the general dischargestandards.(vi) Reuse/Recyclingof treated effluent shall be encouraged and in cases where partof the treated effluent is reused and recycled involvingpossibility of human contact, standards as specified above shallapply.(vii) Central Pollution Control Board/StatePollution Control Boards/Pollution Control Committees may issuemore stringent norms taking account to local condition undersection 5 of the Environment (Protection) Act, 1986;.]

[106. Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance :(i)No building or infrastructure project requiring Environmental Clearance shall be implemented without approved Environmental Management Plan inclusive of dust mitigation measures.(ii)Roads leading to or at construction sites must be paved and blacktopped (i.e. metallic roads).(iii)No excavation of soil shall be carried out without adequate dust mitigation measures in place.(iv)No loose soil or sand or Construction Demolition Waste or any other construction material that causes dust shall be left uncovered.(v)Wind-breaker of appropriate height i.e. □rd of the building height and maximum up to 10 meters shall be provided.(vi)Water sprinkling system shall be put in place.(vii)Dust mitigation measures shall be displayed prominently at the construction site for easy public viewing.] [Inserted by Notification No. G.S.R. 94(E), dated 25.1.2018(w.e.f. 19.11.1986)]

[Sl. No. [Inserted by Notification No. G.S.R. 263 (E), dated 22.3.2018 (w.e.f. 19.11.1986).]	Type of Industrial Sector	Standards	
SO2(mg/Nm3)	NOx(mg/Nm3)		
107	Ceramic*	400	600
108	Foundry Industries ** (Furnaces based on Fuel)	300	400
109	Glass***	500 for natural gas firing 1500 for other fuels	1000
110	Lime Kiln****	400	500
111	Reheating furnace*****	300	1000]

Sl. No.	Industry	Parameters	Standards
1	2	3	4
Ambient Air Quality Standards with respect toNoise in Airport Noise Zone			
[112 [Inserted by Notification No. G.S.R. 568(E), dated 18.6.2018 (w.e.f. 19.11.1986).]	Airports	Type of Airports	Limits in dB (A) Leq*
Day Time	Night Time		
Busy Airports	70	65	
All other Airports excluding proposed airports	65	60]	
[113 [Inserted by Notification No. G.S.R. 5(E), dated 3.1.2019 (w.e.f. 19.11.1986.).]	Kerosene standards	Characteristic	Requirement
Grade A	Grade B		
Appearance	Clear and bright, Free from un-dissolved water,foreign matter and	Clear and bright, Free from un-dissolved water,foreign matter and other visible	

	other visible impurities	impurities
Acidity, inorganic	Nil	Nil
Burning quality(2)		
(a) Char value, mg/Kg of oil consumed,Max	20	20
(b) Bloom on glass Chimney	Not darkar than grey	No darkar than grey
Colour		
(a) Saybolt (in case of undyed kerosene)(3),Min	10	10
(b) Visual (in case of dyed kerosene)	Blue	Blue
Copper strip corrosion for 3 h at 500C	Not worse than No. 1	Not worse than No. 1
Density at 150C, kg/m3	Not limited, but to be reported	Not limited, but to be reported
Distillation		
(a) Percent recovered below 2000C, percent(v/v),Min	20	20
(b) Final boiling point,0C,Max	300	300
Flash point (Abel),0C,Min	35	35
Smoke point(4), mm,Min	18	18
Total sulphur content, percent(5)m/m,Max	0.10	0.20*

*The Ministry of Petroleum and Natural Gas shallmake efforts to produce and supply Grade A kerosene by 2020

Notes:(1) In case of dispute, this shall be the referee method.(2) This test is to be done at refinery end.(3) Where Saybolt chromo meter is not available Lovibond colour of the sample kept in an 18 cell may be measured according to IS 1448: P-13 in which case the colour shall not be deeper than standard white (IP 4.0), however, in case of dispute [P:14] shall be referee method.(4) For supplies to Defence and Railway signal lamps the smoke point of the product shall be 22 mm, Minimum.(5) For all other specifications i.e. test methods, scope, references, grades, requirements, packing and marketing and sampling. It is require to meet Indian Standard IS 1459:2018 for Kerosene Specifications (Fourth Revision), ICS No. 75.160.20, published in July, 2018]

Definitions:(a)*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing. A day time from 6.00 a.m. to 10.00 p.m. and night time from 10.00 p.m. to 6.00 a.m. are considered for time weighted average.(b)"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear (The range of human hearing is 20 Hz to 20 kHz).(c)A "decibel" is a unit in which noise is measured.(d)Leq: It is energy mean of the noise level over a specified period.(e)Busy Airport - For the purpose of noise management at airports, a busy airport shall be defined as "a civil airport which has more than 50,000 aircraft movements per year (a movement being a take-off or a landing)" excluding those purely for training purposes on light aircraft.(f)Take-off - A phase of flight from the application of takeoff power to an altitude of final take-off segment.(g)Landing - A phase of flight from the beginning of the landing flare until aircraft exits the landing runway comes to a stop on the runway, or when power is applied for takeoff in the case of a touch-andgo landing.(h)Lmax is unit for aircraft maximum noise level in units dB(A) which is maximum or peak noise value for aircrafts at the monitoring location in accordance with the noise standards notified by the Directorate General of Civil Aviation for respective airports.(i)Other Airports - an airport having more than 15000 but less than 50000 aircraft movement annually.(j)Proposed Airports - airport that is not functional yet and is under development.Note : (i) Day time shall mean from 6.00 a.m. to 10.00 p.m and night time shall mean from 10.00 p.m. to 6.00 a.m.(ii)The above specified limits shall have a tolerance limit of 10dB (A) Leq.(iii)The specified limit excludes defense aircraft and aircraft landing and take-off noise from all runways and aircraft engine/ground run-ups, helipad locations earmarked by Airport Operator for this purpose.(iv)However, the limit for aircraft noise as Lmax will be notified by the airport operator with approval of the Directorate General of Civil Aviation at the aircraft noise monitoring locations installed by the airports as mentioned in paragraph 1 of this notification.(v)The noise limits specified in above shall replace and supersede the ambient air quality in respect of noise limits of the following existing zones:(a)Silence;(b)Residential; and(c)Commercial areas;(vi)As specified in the Noise Pollution (Regulation and Control) Rules, 2000 in the areas falling directly under Airport Noise Zone.(vii)The noise standards within the overall boundary of airports shall be applicable as Industrial Areas i.e. day time 75 dB (A) Leq and night time 70 db (A) Leq as per the Noise (Regulation and Control) Rules 2000 and shall be measured at different points of airport boundary and then averaged.(viii)These standards will not be applicable to a civil airport which has less than 15,000 aircraft movement annually.

1.

(1)For Airports excluding newly proposed airports. - In addition to dB(A) Leq applicable in the 'airport noise zones' specified above, Lmax value in dB(A) shall be published by the airport operator with approval of the Directorate General of Civil Aviation only for airports having more than 50,000 annual traffic movements. These Lmax values shall be complied by airlines and to be monitored and communicated by Airport Operator to the Directorate General of Civil Aviation. These Lmax value shall be reviewed as and when there is a requirement in future.(2)For Proposed Airports (yet to be operationalized):(i)For any upcoming/New Airports, noise modeling shall be conducted by the airport operators and results should be submitted to the Ministry of Environment, Forest and Climate Change while seeking Environment Clearance under the Environment Impact Assessment

Notification, 2006.(ii)The airport operators should also develop airport noise zone as specified in paragraph 4 and share the same with Ministry of Housing and Urban Affairs and concerned State Development Authority for necessary land use planning around airport.(iii)The concerned State / Union Territory Development Authorities should not allow any new residential, institutions commercial facilities and other noise sensitive area falling in the airport noise zone area without any noise reduction measure.

2. Compliance of noise levels applicable to Airport Noise Zone as specified above shall lie with the airport operator and overseen by the Directorate General of Civil Aviation.

3. Airport operators shall prepare Noise Management Plan for compliance of the Airport Noise Standards.

4. Airport Noise Zones. - (1) The Airport Noise Zone area for each Airport shall be defined as Noise Contour for day and night period by the respective Airport Operator on the basis of existing GSR 751 (E), issued by the Ministry of Civil Aviation (Height Restrictions for Safeguarding of Aircraft Operations) Rules, 2015 published on 30th September, 2015 as amended from time to time on Height Restriction for Safeguarding of Aircraft Operation considering all approach and departure funnels and Instrument Flight Procedures (i.e. Instrument Approach Procedures, Standard Instrument Departure Standard Terminal Arrival Route) in consultation with airports Air Navigation Service Provider as per the Master Plan of the Airport. The same shall be shall be approved by the Directorate General of Civil Aviation and displayed on the website of respective Airport Operators. This activity shall be completed within two years from the date of issuance of the final notification.

(2)State / Union Territory Development Authorities should take into consideration of Airport Operations requirements in the airport noise zone area for the land use planning around the airport.

5. Airport Noise Mapping. - Noise mapping in for all airports should be carried out as per the requirements specified in the Director General Civil Aviation's requirements by the airport operators considering future aircraft movement and traffic projections of the airport as per the Master Plan of the Airport. This information to be displayed at a prominent places at Airports as well as in the website of respective Airport Operator and State / Union Territory Development Authority.

6. Protocol and Measurements Procedure. - Monitoring protocol and measurements procedure for airport noise zone displayed on the website of the Ministry of Environment, Forest and the Climate Change and the Central Pollution Control Board shall be followed.

7. Development Authorities / Regional Planning Department shall specify provisions for inclusion of sound resistance in new buildings, facilities and projects of residential, institutional, hospital and commercial facilities in the design, construction and materials selections for improving indoor environment under existing building codes and bye laws for any building constructions coming under airport noise zones.

8. All the Airport, Airline and Authority shall comply with the requirements specified in the notification within two years from the date of notification.]

[SCHEDULE III] [Inserted by G.S.R. 1063(E), dated 26.12.1989 (w.e.f. 26.12.1989).](See rule 3)AMBIENT AIR QUALITY STANDARDS IN RESPECT OF NOISE

Area Code	Category of Area	Limits in dB(A)	Leg.
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note (1). - Day time is reckoned in between 6 a.m. and 9 p.m.Note (2). - Night time is reckoned in between 9 p.m. and 6 a.m.Note (3). - Silence zone is defined as areas upto 100 metres around such premises as hospitals, educational institutions and Courts. The Silence zones are to be declared by the Competent Authority.Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these zones.Note (4). - Mixed categories of areas should be declared as one of the four above-mentioned categories by the Competent Authority and the corresponding standards shall apply.[SCHEDULE IV] [Inserted by G.S.R. 54(E), dated 5.2.1990 (w.e.f. 5.2.1990).](See rule 3)STANDARDS FOR EMISSION OF SMOKE, VAPOUR, ETC., FROM MOTOR VEHICLES(1)Every motor vehicle shall be manufactured and maintained in such condition and shall be so driven that smoke, visible vapour, grit, sparks, ashes, cinders or oily substance do no emit therefrom.(2)On and from the 1st day of March, 1990, every motor vehicle in use shall comply with the following standards:-(a)Idling CO (Carbon monoxide) emission limit for all four wheeled petrol driven vehicles shall not exceed 3 per cent by volume;(b)Idling CO emission limit for all two and three wheeled petrol driven vehicles shall not exceed 4.5 per cent by volume;(c)Smoke density for all diesel driven vehicles shall be as follows :-

Method of Test	Maximum smoke

	density		
	Light absorption co-efficient m-1	Bosch Units	Hatridge Units
(a) Full load at a speed of 60% to 70% of maximum engine rated speed declared by the manufacturer	3.1	5.2	75
(b) Free acceleration	2.3	-	65

(3)On and from the 1st day of April, 1991, all petrol driven vehicles shall be so manufactured that they comply with the mass emission standards as specified at Annexure "I". The breakdown of the operating cycle used for the test shall be as specified at Annexure "II" and the reference fuel for all such tests shall be as specified in Annexure "III" to this Schedule.(4)On and from the 1st day of April, 1991, all diesel driven vehicles shall be so manufactured that they comply with the mass emission standards based on exhaust gas opacity as specified at Annexure "IV" to this Schedule.(5)On and from the 1st day of April, 1992, all diesel driven vehicles shall be so manufactured that they comply with the following levels of emissions under the Indian driving cycle :-

Mass of Carbon Monoxide (CO) Maxm.Grams per KWH	Mass of Hydro Carbons (HC) Maxm.Grams per KWH	Mass of Nitrogen Oxides (NO) Maxm.Grains per KWH
14	3.5	18

(6)Each motor vehicle manufactured on and after the dates specified in paragraphs (2), (3), (4) and (5) shall be certified by the manufacturers to be conforming to the standards specified in the said paragraphs and the manufactures shall further certify that the components liable to effect the emission of gaseous pollutants are so designed, constructed and assembled as to enable the vehicle, in nominal use, despite the vibration to which it may be subjected, to comply with the provisions of the said paragraphs.(7)Test for smoke emission level and Carbon Monoxide level for motor vehicles.-(a) Any officer not below the rank of a Sub-Inspector of police or an Inspector of motor vehicles, who has reason to believe that a motor vehicle is by virtue of smoke emitted from it or other pollutants like Carbon Monoxide emitted from it, is likely to cause environmental pollution, endangering the health or safety of any other user of the road or the public, may direct the driver or any person incharge of the vehicle to submit the vehicle for undergoing a test to measure the standard of black smoke or the standard of any other pollutants.(b)The driver or any person incharge of the vehicle shall upon demand by any officer referred to in sub-paragraph (a), submit the vehicle for testing for the purpose of measuring the standard of smoke or the levels of other pollutants or both.(c)The measurement of standard of smoke shall be done with a smoke meter of a type approved by the State Government and the measurement of other pollutants like Carbon Monoxide shall be done with instruments of a type approved by the State Government.ANNEXURE I(See paragraph 3)MASS EMISSION STANDARDS FOR PETROL DRIVEN VEHICLES

1. Type Approval Tests:

Two and Three Wheeler Vehicles

Reference Mass, R(kg)	CO(g/km)	HC(G/km)

1	2	3	
R□150	12		8
150R□350	12+	18(R-150)200	8+ 4(R-150)200
R350	30		12

Light Duty Vehicles :

Reference Mass, rw(kg)	CO(g/km)	HC(g/km)
1	2	3
rw □1020	14.3	2.0
1020 rw□1250	16.5	2.1
1250 rw□1470	18.8	2.1
1470 rw□1700	20.7	2.3
1700 rw□1930	22.9	2.5
1930 rw□2150	24.9	2.7
rw□2150	27.1	2.9

2. Conformity of Productioan Tests :

Two and Three Wheeler Vehicles

Reference Mass, rw(kg)	CO(g/km)	HC(G/km)	
1	2	3	
R150	15		8
150R□350	15+	25(R-150)200	10+ 5(R-150)200
R350	40		15

Light Duty Vehicles :

Reference Mass, rw(kg)	CO(g/km)	HC(g/km)
1	2	3
rw □1020	17.3	2.7
1020rw□1250	19.7	2.7
1250rw□1470	22.5	2.8
1470rw□1700	24.9	3.0
1700rw□1930	27.6	3.3
1930rw□2150	29.9	3.5
rw□2150	32.6	3.7

For any of the pollutants referred to above of the three results obtained may exceed the limit specified for the vehicle by not more than 10 per cent.Explanation. - Mass emission standards refers to the gm. of pollutants emitted per km. run of the vehicle, as determined by a chassis dynamometer test using the Indian Driving Cycle.ANNEXURE II(See paragraph 3)BREAKDOWN OF THE OPERATING CYCLE USED FOR THE TESTS

	No. of Operation	Acceleration (m/acc2)	Speed (km/h)	Duration of each operation(s)	Cumulative Time(s)
1	2	3	4	5	
1.	Idling	-	-	16	16
2.	Acceleration	0.65	0-14	6	22
3.	Acceleration	0.56	14-22	4	26
4.	Deceleration	-0.63	22-13	4	30
5.	Steady speed	-	13	2	32
6.	Acceleration	0.56	13-23	5	37
7.	Acceleration	0.44	23-31	5	42
8.	Deceleration	-0.56	31-25	3	45
9.	Steady speed	-	25	4	49
10.	Deceleration	-0.56	25-21	2	51
11.	Acceleration	0.45	21-34	8	59
12.	Acceleration	0.32	34-42	7	66
13.	Deceleration	-0.46	42-37	3	69
14.	Steady speed	-	37	7	76
15.	Deceleration	-0.42	34-34	2	78
16.	Acceleration	0.32	34-42	7	85
17.	Deceleration	-0.46	42-47	9	94
18.	Deceleration	-0.52	27-14	7	101
19.	Deceleration	-0.56	14-00	7	108

ANNEXURE III(See paragraph 3)REFERENCE FUEL FOR TYPE AND PRODUCTION CONFORMITY TESTS

Sl. No.	Characteristic	Requirements	Method of Test ref. of P: or IS: 1448*	
87 Octane	93 Octane			
1	2	3	4	5
1.	Colour, visual	Orange	Red	
2.	Copper-strip corrosion for 3 hours at 50°C	Not worse than No.1	P:15(1968)	
3.	Density at 151C	Not limited but to be reported	P:16(1967)	
4.	Distillation:		P:18(1967)	
	(a) Initial boiling point	Not limited but to be reported		
	(b) Recovery up to 20°C per cent by volume, Min.	10	10	

	(c) Recovery upto 125" C 50 per cent by volume	50	50	
	(d) Recovery upto 130°C per cent by volume, Min.	90	90	
	(e) Final boiling point, Max.	215°C	215°C	
	(f) Residue per cent by volume, Max.	2	2	
5.	Octane number (Research method) Max.	87	94	P:27 (1960)
6.	Oxidation stability in minutes, Min.	360	360	P:28 (1966)
7.	Residue on evaporation mg/100 ml, Max.	4.0	4.0	P:29 (1960) (Air-jet solvent washed)
8.	Sulphur, total, per cent by weight Max.	0.25	0.20	P:34 (1966)
9.	Lead content (as Pb), g/1 Max.	0.56	0.80	P:37 (1967) or P:38 (1967)
10.	Reid vapour pressure at 38 degree C, kgf/cm3, Max.	0.70		P:39 (1967)

*Methods of test for petroleum and its products.ANNEXURE IV(See paragraph 4)LIMIT VALUES OF EXHAUST GAS OPACITY APPLICABLE FOR DIESEL DRIVEN VEHICLES THE ENGINE TESTS AT STEADY SPEED

Nominal Flow G(1 /s)	Absorption Co-efficient K(m-1)	Nominal Flow G(1 /s)	Absorption Co-efficient K(m-1)
42	2.00	120	1.20
45	1.91	125	1.17
50	1.82	130	1.15
55	1.75	135	1.31
60	1.68	140	1.11
65	1.61	145	1.09
70	1.56	150	1.07
75	1.50	155	1.05
80	1.46	160	1.04
85	1.41	165	1.02
90	1.38	170	1.01
95	1.34	175	1.00

100	1.31	180	0.99
105	1.27	185	0.97
110	1.25	190	0.96
115	1.22	195	0.95
		20(1	0.93

[SCHEDULE] [Inserted by G.S.R. 82(E), dated 16.2.1987 (w.e.f. 16.2.1987).] [V] [Renumbered by G.S.R. 422(E), dated 19.5.1993 (w.e.f. 19.5.1993).](See rule 12)

Sl. No.	Place at which the discharge of any environment pollutant in excess of prescribed standards occurs or is apprehended to occur	Authorities or agencies to be intimated	Appointed under
1	2	3	4
1.	Factories as defined under the Factories Act, 1948 -		
(a) Owned by the Central Government and engaged in carrying out the purposes of the Atomic Energy Act, 1962	(i) Atomic Energy Regulatory	The Atomic Energy Act, 1962	
	(ii) The Ministry of Environment andForest	-	
(b)Factories other than those mentioned in para. (a)	(i) The Chief Inspector of Factories	The Factories Act, 1948	
	(ii) The Inspector of Factories having local jurisdiction	-do-	
	(iii) The Ministry of Environment and Forests	-	
2.	Mine as defined tinder the Mines and Minerals (Regulation and Development) Act. 1957	(i) [The Controller-General of Mines] [Substituted by S.O. 64(E), dated 18.1.1988 (w.e.f. 18.1.1988).]	The Mines and Minerals (Regulation and Development) Act, 1957
	(ii) Regional Controller	-	

of Mines having local jurisdiction]			
(iii) The Ministry of Environment and Forests	-		
3.	Port as defined under the Indian Ports Act, 1908	(i)Conservator of Ports	The Indian Ports Act, 1908
(ii) The Ministry of Environment and Forests	-		
4.	Plantationas defined under the Plantations Labour Act, 1951	(i) The Chief Inspector of Plantations	The Plantations Labour Act, 1951
(ii) The Inspector of Plantations having local jurisdiction	-do-		
(iii) The Ministry of Environment and Forests	-		
5.	Motor Vehicle as defined under the Motor Vehicles Act, 1939	(i) State Transport Authority	The Motor Vehicles Act, 1939
(ii) Regional Transport Authority having regional jurisdictions	-do-		
(iii) The Ministry of Environment and Forests	-		
6.	Ship as defined under the Merchant Shipping Act, 1958	(i)Director-General of Shipping	The Merchant Shipping Act, 1958
(ii) Surveyor having jurisdiction	-do-		
(iii) The Ministry of Environment and Forests	-		

[SCHEDULE VI] [Inserted by G.S.R. 422(E), dated 19.5.1993 (w.e.f. 19.5.1993).][See rule 3(3-A)]GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS

Part A

Effluents

Sl. No.	Parameter	Standards			
		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2	3(a)	3(h)	3(c)	3(d)
1.	Colourand odour	See 6 of Annexure I	-	See 6 of Annexure I	See 6 of Annexure 1
2.	Suspended solids mg/1, Max.	100	600	200	(a) For process waste water-100 (b) For cooling water effluent 10 per cent. above total suspended matter of influent
3.	Particle size of suspended solids	Shall pass 850 micron IS Sieve	-		(a) Floatable solids, Max. 3 mm. (b) Settleable solids, Max. 850 microns
4.	[***] [Omitted by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]				
5.	pH value	5.5-9.0	5.5-9.0	5.5-9.0	5.5-9.0
6.	Temperature	Shall not exceed 5°C above the receiving water temperature	-	-	Shall not exceed 5°C above the receiving water temperature
7.	Oil and grease mg/1, Max.	10	20	10	[10] [Substituted for the words "20" by

					Notification No. G.S.R. 739 (E) dated 9.9.2010 (w.e.f. 19.11.1986)]
8.	Total residual chlorine mg/1, Max.	1.0	-	-	1.0
9.	AmmoniacalNitrogen (as N), mg/1, Max.	50	50	-	50
10.	Total Kjeldahl nitrogen1[N]; mg/1, Max.	100	-	-	100
11.	Free Ammonia1[NH3]mg/1, Max.	5.0	-	-	5.0
12.	Biochemical Oxygen demand (5 days at 20°C)1[mg/1, Max]	30	350	100	100
13.	Chemical Oxygen demand, mg/1, Max.	250	-	-	250
14.	Arsenic (as As)1[mg/1], Max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg), mg/1, Max.	0.01	0.01	-	0.01
16.	Lead (as Pb)mg/1, Max.	0.1	1.0	-	2.0
17.	Cadmium (as Cd)mg/1, Max.	2.0	1.0	-	2.0
18.	Hexavalentchromium (as Cr+6) mg/I, Max.	0.1	2.0	-	1.0
19.	Total Chromium (as Cr) mg/1, Max.	2.0	2.0	-	2.0
20.	Copper (as Cu) mg/1, Max.	3.0	3.0	-	3.0
21.	Zinc (as Zn) mg/1, Max.	5.0	15	-	15
22.	Selenium (as Se) mg/1, Max.	0.05	0.05	-	0.05
23.	Nickel (as Ni) mg/1, Max.	3.0	3.0		5.0
	[***] [Omitted by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]				
	[***] [Omitted by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]				
	[***] [Omitted by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]				
27.	Cyanide (as CN) mg/1, Max.	0.2	2.0	0.2	0.2

	[***] [Omitted by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]				
29.	[Fluoride] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).](as F) mg/1, Max.	2.0	15	-	15
30.	Dissolved Phosphates (as P) mg/1, Max	5.0	-	-	-
	[***] [Omitted by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]				
32.	Sulphide(as S) mg/1, Max.	2.0	-	-	5.0
33.	Phenoliccompounds[as C6H5OH] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]mg/1, Max.	1.0	5.0	-	5.0
34.	Radioactive materials:				
	(a) Alpha emitters1[Micro curie/ml] Max.	10-7	10-7	1[10-8]	10-7
	(b) Beta emitters[Micro curie/ml] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]Max.	10-6	10-6	10-7	1[10-6]
35.	Bio-assay test	90% survival of fish of after 96 hours in 100% effluent	90% survival of fish of after 96 hours in 100% effluent	90% survival of fish of after 96 hours in 100% effluent	90% survival of fish of after 96 hours in 100% effluent
36.	Manganese (as Mn)	2mg/1	2mg/1		2mg/1
37.	Iron (as Fe)	3mg/1	3mg/1		3mg/1
38.	Vanadium (as V)	0.2 mg/1	0.2 mg/1		0.2 mg/1
39.	Nitrate Nitrogen	10mg/1	-	-	20 mg/1
	[***] [Entry 40 omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]				

Part B

Waste-Water Generation Standards

Sl.No	Industry	Quantum
1.	Integrated IronSteel	16 [m3/tonne]of finished steel
2.	Sugar	0.4 [m3/tonne]of cane crushed
3.	Pulp PaperIndustries	
	(a) Larger pulppaper	
	(i) Pulppaper	175 [m3/tonne]of paper produced
	(ii) [ViscoseStaple Fibre	150 m3/tonneof product
	(iii) ViscoseFilament Yarn	500 m3/tonneof product]
	(b) Small pulppaper:	
	(i) Agro-residuebased	150 [m3/tonne]of paper produced
	(ii) Waste paperbased	50 [m3/tonne]of paper produced
4.	FermentationIndustries	
	(a) Maltry	3.5 [m3/tonne]of grain produced
	(b) Brewery	0.25 [m3/KL]of beer produced
	(c) Distillery	12 [m3/KL]of alcohol produced
5.	Caustic Soda	
	(a) Membrane cellprocess	1 [m3/tonne]of caustic soda produced excluding cooling tower blow down
	(b) Mercury cellprocess	4 [m3/tonne]of caustic soda produced (mercury bearing).
		10% blow downpermitted for cooling tower

6.	Textile Industries:	
	Man-made fibre	
	(i) NylonPolyester	120 [m3/tonne]of fibre produced
	(ii) Viscose rayon	150 [m3/tonne]of product
7.	Tanneries	28 [m3/tonne]of raw hide
8.	Starch, Glucoseand related products	8 [m3/tonne]of maize crushed
9.	Dairy	3 [m3/KL]of milk
10.	Natural rubberprocessing industry	4 [m3/tonne]of rubber
11. [[Substituted by Notification No. G.S.R. 1607(E), dated 29.12.2017 (w.e.f. 19.11.1986).]	Fertiliser Industry	
	Naphtha, Natural Gas Mixed Feedstock(Naphtha + Natural Gas) Based (Straight Nitrogenous Fertiliser)	3.0 m3/tonne of Urea or equivalent produced
	Straight Phosphatic Fertilizer (Single SuperPhosphate (SSP) Triple Super Phosphate (TSP) excludingmanufacturing of any acid	0.4 m3/tonne of SSP or TSP
	Complex Fertilizer	Standards of nitrogenous and Phosphaticfertiliser are applicable depending on the primary product.]
12.	Natural RubberProcessing Industry : Centrifuging and Creaming Units and Crapsand Crumb Units- 5 m3/tonne of product in Centrifugingunits;- 8 m3/tonne of product in Creaming units; and- 40m3/tonne of product in Craps and Crumb units.	

Part C

Load Based Standards

1. [Petroleum Oil Refinery :] [Substituted by G.S.R. 186(E), dated 18.3.2008 (w.e.f. 18.3.2008).]

	Parameter	Standard
	1	2
		Quantum limit in kg/1,000 tonne of crude processed
1.	Oil Grease	2.0
2.	BOD days, 270C	6.0
3.	COD3	50
4.	Suspended Solids	8.0
5.	Phenols .	0.14
6.	Sulphides	0.2
7.	CN	0.08
8.	Ammonia as N	6.0
9.	TKN	16
10.	P	1.2
11.	Cr (Hexavalent)	0.04
12.	Cr (Total)	0.8
13.	Pb	0.04
14.	Hg	0.004
15.	Zn	2.0
16.	Ni	0.4
17.	Cu	0.4
18.	V	0.8
19.	Benzene	0.04
20.	Benno (□)-Pyrene	0.08

Notes. - (i) Quantum limits shall be applicable for discharge of total effluent (process effluent, cooling water blow down including sea cooling water blow down, washings, etc.) to receiving environment (excluding direct application on land for irrigation/horticulture purposes within the premises of refinery).(ii)In order to measure the quantity of effluent (separately for discharge to receiving environment, application for irrigation/horticulture purposes within the premises of refinery blow-down of cooling systems), appropriate flow measuring devices (e.g. V-notch, flow meters) shall be provided with.(iii)Quantum of pollutants shall be calculated on the basis of daily average of concentration values (one 24-hourly composite sample or average of three grab samples, as the case may be), average flow of effluent during the day and crude throughput capacity of the refinery.(iv)Limit for quantity of effluent discharged (excluding blow-down from seawater cooling) shall be 400 m3/1000 tonne of crude processed. However, for refineries located in high rain fall area, limit of quantity of effluent only during rainy days shall be 700 m3/1000 tonne of crude processed.

2.Large Pulp Paper, News Print/Rayon grade plants of capacity above 24000[tonne] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]/Annum	
Parameter	Quantum
Total Organic Chloride (TOCI)	2[kg/tonne] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]of product.

3. [Natural Rubber Processing and Rubber Product Industry: Centrifuging and Creaming Units, Craps and Crumb Units.] [Inserted by Notification No. G.S.R. 221 (E) dated 18.3.2011 (w.e.f. 19.11.1986)]

Parameter	Standards: Quantum limit in kg/100 tonne of finished Products
Oil andGrease	1.5
BOD, 3days at 27°C	200
SuspendedSolids	200
TotalChromium	0.10
Lead	0.15

Part D

General Emission Standards

1. Concentration Based Standards:

Sl. No.	Parameter Concentration not to exceed (in mg/Nm3)	Standard
1.	[Particulate Matter (PM)	150
2.	[Total Fluoride] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]	[25] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]
3.	Asbestos	[4 Fibres/cc and dust should not be more than 2 mg/Nm3] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]
4.	Mercury	0.2

5.	Chlorine	15		
[6] [Substituted by Notification No. G.S.R. 595 (E), dated 21.8.2009 (w.e.f. 19.11.1986).]	Petroleum Oil refinery (Sulphur Recovery)		Installed Capacity of SRU* (tonne/day)	Kg/tonne of sulphur in the feed to SRU
Existing SRU	New SRU			
Sulphur Dioxide	Above 20	26	10	
5 to 20	80	40		
Up to 5	120	80		
7	[***] [Omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]			
8.	Sulphuric acid mist	50		
9.	Carbon monoxide	[1% max (v/v)] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]		
	[***] [Omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]			
11.	Lead	[10 mg/Nm3] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]		
	[***] [Omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]			

*SRU - Sulphur Recovery UnitII. Equipment Based Standards :[For dispersal of sulphur dioxide, a minimum stack height limit is accordingly prescribed as below :] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]

Sl. No.	Parameter	Standard
1.	Sulphurdioxide	Stack-height limit in[metre] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]
	(i) Power generation capacity:	
	-500 MW and more	275

-200/210 MW and above to less than 500 MW 220

-less than 200/210 MW H=14 (Q)0.3

(ii) Steam generation capacity Coal consumption per day

-Less than 2[tonne/hr] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] [***] [Omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]

2 to5 [tonne/hr]

-5 to 10 [tonne/hr]

-10 to 15 [tonne/hr]

-15 to 20 [tonne/hr]

-20 to 25 [tonne/hr]

-25 to 30 [tonne/hr]

-More than 30[tonne/hr] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]

Note. - H-Physical height of the stack in [metre] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]Q-Emission rate of SO2 in kg/hr. [***] [Omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]III. Load/Mass-based Standards :

Sl.No.	Industry	Parameter	Standard		
1.	[Fertiliser](Urea)				
	Commissioned priorto 1-1-1982	[ParticulateMatter (PM)]	2 [kg/tonne] ofproduct		
	Commissioned after1-1-1982	[ParticulateMatter (PM)]	0.5 [kg/tonne] ofproduct		
			Quantum Limit inkg/tonne Plant capacity for 100% concentration of Sulphuric Acid(tonne/day)	Existing Unit	New Unit
2. [] [Substituted by Notification No. G.S.R. 354 (E) dated 2.5.2011 (w.e.f. 19.11.1986)]	Copper, Lead orZinc Smelting Plant	Sulphur-Dioxide(SO2)	Upto 300Above300	2.5	2.0
				2.0	1.5
3.	Nitric Acid	Oxides of Nitrogen	3 [kg/tonne] ofweak acid (before concentration) produced		

			Quantum Limit inkg/tonne		
			Plant capacity100% Concentration ofSulphuric Acid tonne/day)	for Existing Unit	New Unit
4. [] [Substituted by Notification No. G.S.R. 344(E), dated 7.5.2008 (w.e.f. 19.11.1986).]	Sulphuric AcidPlant	Sulphur dioxide(SO2)	Up to 300	2.5	2.0
			Above 300	2.0	1.5
5.	Integrated Ironand Steel Plant	Carbon monoxideParticulate matterduring coke pushing in coke ovenParticulate matterfor quenching operation in Coke Oven	3kg/tonne of cokeproduced5 gramme/tonne ofcoke produced50 gramme/tonne ofcoke produced.”		
6.	Petroleum OilRefinery (Sulphur Recovery)		Installed Capacityof SRU*	Kg/tonne ofsulphur in the feed to SRU	
			(tonne/day)	Existing SRU	New SRU
			above 20	26	10
		Sulphur Dioxide	5 to 20	80	40
			up to 5	120	80]
	[***]				
7.	Aluminium Plants:				
	(i) Anode BakeOven	Total Fluoride	0.3 Kg/MT ofAluminium		
	(ii) Pot room				
	(a) VSS	-do-	4.7 Kg/MT ofAluminium		
	(b) HSS	-do-	6 Kg/MT ofAluminium		
	(c) PBSW	-do-	2.5 Kg/MT ofAluminium		
	(d) PBCW	-do-			

			1.0 Kg/MT ofAluminium	
	Note:			
	VSS	= Vertical StudSoderberg		
	HSS	= Horizontal StudSoderberg		
	[PBSW]	= Pre Backed SideWork		
	PBCW	= Pre BackedCentre Work		
8.	Glass Industry:			
	(a)FurnaceCapacity			
	(i) Upto theproduct draw capacity of 60 MT/Day	Particulate matter	2kg/hr	
	(ii) Product drawcapacity more than 60 MT/Day	-do-	0.8 kg/MT ofproduct drawn	
9.	Petrochemicals(Basic and Intermediates)		Source	Quantumlimit in gm/hour for New/Expansion Plants (gm/hr)
OrganicParticulate	Phthalic anhydride(PA),Maleic anhydride (MA),Toluene Di-isocyanate (TDI)plants-process emission	100		
VOC-HAPs (TDI+MDI)	(TolueneDi-isocyate) TDI, Methylenediphenyl Di-isocynate (MDI)Plants-Process emission	0.5		
VOC-HAPs (BenzeneButadiene)	Benzene, ButadienePlants-Process emission	25.0		
VOC-HAPs (EO, VCM,EDC, ACN+PO)	EO, VCM, EDC, ACN,PO Plants-Process	50.0		

emission

Part E

Noise StandardsA. Noise Limits for Automobiles [Free Field Distance at 7.5 Metre] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] in dB(A) at the manufacturing stage

(a) Motorcycles, Scooters Three-wheelers	80
(b) Passenger Cars	82
(c) Passenger or Commercial vehicles upto 4 MT	85
(d) Passenger or Commercial vehicles above 4 MT and upto 12 MT	89
(e) Passenger or Commercial vehicles exceeding 12 MT	91

[AA. Noise limits for vehicles at manufacturing stageThe test method to be followed shall be IS: 3028-1998.] [Substituted by G.S.R. 849(E), dated 30.12.2002 (w.e.f. 30.12.2002). Earlier it was inserted by G.S.R. 742(E), dated 25.9.2000 (w.e.f. 25-9-2000).](1)Noise limits for vehicles applicable at manufacturing stage from the year 2003.

Sl. No.	Type of vehicles	Noise limits dB(A)	Date of implementation
1.	Two wheeler		
	Displacement upto 80 cm3	75	
	Displacement more than 80 cm3but upto 175 cm3	77	1st January, 2003
	Displacement more than 175 cm3	80	
2.	Three wheeler		
	Displacement upto 175 cm3	77	
	Displacement more than 175 cm3	80	1st January, 2003
3.	Passenger car	75	1st January, 2003
4.	Passenger or commercial vehicles		
	Gross vehicle weight upto 4 tonnes	80	
	Gross vehicle weight more than 4 tonnes but upto 12 tonnes	83	1st July, 2003
	Gross vehicle weight more than 12 tonnes	85	

(2)Noise limits for vehicles at manufacturing stage applicable on and from 1st April, 2005.

Sl. No.	Type of vehicles	Noise limits dB(A)
1.0	Two wheelers	
1.1	Displacement upto 80 cc	75
1.2	Displacement more than 80 cc but upto 175 cc	77
1.3	Displacement more than 175 cc	80
2.0	Three wheelers	

2.1	Displacement upto 175 cc	77
2.2	Displacement more than 175 cc	80
3.0	Vehicles used for the carriage of passengers and capable of having not more than nine seats, including the driver's seat	74
4.0	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat, and a maximum Gross Vehicle Weight (GVW) of more than 3.5 tonnes	
4.1	With an engine power less than 150 KW	78
4.2	With an engine power of 150 KW or above	80
5.0	Vehicles used for the carriage of passengers having more than nine seats, including the driver's seat: vehicles used for the carriage of goods	
5.1	With a maximum GVW not exceeding 2 tonnes	76
5.2	With a maximum GVW greater than 3 tonnes but not exceeding 3.5 tonnes	77
6.0	Vehicles used for the transport of goods with a maximum GVW exceeding 3.5 tonnes	
6.1	With an engine power less than 75 KW	77
6.2	With an engine power of 75 KW or above but less than 150 KW	78
6.3	With an engine power of 150 KW or above:	80

[Provided that for vehicles mentioned at serial numbers 3.0 to 6.3, the noise limits for the following States shall be applicable on and from the date specified against that State,-(i)Himachal Pradesh with effect from 1st October, 2005(ii)Jammu and Kashmir with effect from 1st October, 2005(iii)Madhya Pradesh with effect from 1st September, 2005(iv)Punjab with effect from 1st October, 2005(v)Rajasthan with effect from 1st June, 2005(vi)Uttar Pradesh (Mathura, Kannauj, Muzaffarnagar, Aligarh, Farukkabad, Saharanpur, Badaun, Barreily, Moradabad, Hathras, Rampur, Bijnor, Agra, Pilibhit, J.P. Nagar, Mainpuri, Lalitpur, Hardoi, Ferozabad, Jhansi, Shahjahanpur, Etawah, Jalon, Lakhimpur Kheri, Etah, Mahoba and Sitapur) with effect from 1st June, 2005.(vii)Uttranchal with effect from 1st July, 2005.]B. Domestic appliances and construction equipments at the manufacturing stage to be achieved by 31st December, 1993.

(a)	Window Air Conditioners of 1 tonnes to 1.5 tonnes	68
(b)	Air[coolers] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]	60
(c)	Refrigerators	46
	[***] [Entry (d) omitted by G.S.R. 371(E), dated 17.5.2002 (w.e.f. 17.5.2002).]	
(e)	compactors(rollers), Front loaders, Concrete mixers, Cranes (movable), Vibrators and Saws.	75

ANNEXURE I(For the purposes of Parts A, B and C)The State Boards shall follow the following guidelines in enforcing the standards specified under Schedule VI:

1. The waste-waters and gases are to be treated with the best available technology [(BAT)] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] in order to achieve the prescribed standards.

2. The industries need to be encouraged for recycling and reuse of waste materials as far as practicable in order to minimise the discharge of wastes into the environment.

3. The industries are to be encouraged for recovery of biogas, energy and reusable materials.

4. While permitting the discharge of effluents and omissions into the environment, State Boards have to take into account the assimilative capacities of the receiving bodies, especially water bodies so that quality of the intended use of the receiving water is not affected. Where such quality is likely to be affected, discharges should not be allowed into water bodies.

5. The Central and State Boards shall put emphasis on the implementation of clean technologies by the industries in order to increase fuel efficiency and reduce the generation of environmental pollutants.

6. All efforts should be made to remove colour and unpleasant odour as far as practicable.

7. The standards mentioned in this Schedule [shall also apply to all other effluents] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] discharged such as mining, and mineral processing activities and sewage.

8. The limit given for the total concentration of mercury in the final effluent of caustic soda industry, is for the combined effluent from (a) Cell house, (b) Brine plant, (c) Chlorine handling, (d) Hydrogen handling, and (e) Hydro chlorie acid plant.

[***] [Clause (9) omitted by G.S.R. 176(E), dated 2.4.1996 (w.e.f. 3.4.1996).]

10. All effluents discharged including from the industries such as cotton textile, composite woollen mills, synthetic rubber, small pulp and paper, natural rubber, petro-chemicals, tanneries, paint, dyes, slaughter houses, food fruit processing and dairy [industries] into surface waters shall conform to the BOD limits specified above, namely, 30 mg/ 1. For discharge of an effluent having a BOD more than 30 mg/1, the standards shall conform to those given above for other receiving bodies, namely, sewers, coastal waters

and land for irrigation.

[***] [Clause (11) omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]

12. In case of fertilizer industry the limits in respect of chromium and [fluoride] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] shall be complied with at the outlet of chromium and [fluoride] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] removal units respectively.

13. In case of pesticides :

(a)The limits should be complied with at the end of treatment plant before dilution.(b)Bio-assay test should be carried out with the available species of fish in the receiving water, the COD limits to be specified in the consent conditions should be correlated with the BOD limits.(c)In case notabilities and isomers of the pesticides in the given list are found in significant concentrations, standards should be prescribed for these also in the same concentration as the individual pesticides.(d)Industries are required to analyse pesticides in waste-water by advanced analytical methods such as GLC/HPLC.

14. [The chemical oxygen demand (COD) concentration in a treated effluent, if observed to be persistently greater than 250 mg/1 before disposal to any receiving body (public sewer, land for irrigation, inland surface water and marine coastal areas), such industrial units are required to identify chemicals causing the same. In case these are found to be toxic as defined in the Schedule I of the Hazardous Wastes (Management and Handling) Rules, 1989 the State Boards in such cases shall direct the industries to install tertiary treatment stipulating time limit.

15. Standards specified in Part A of Schedule VI for discharge of effluents into the public sewer shall be applicable only if such sewer lead to a secondary treatment including biological treatment system, otherwise these discharge into sewers shall be treated as discharge into inland surface waters.] [Inserted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]

ANNEXURE II(For the purpose of Part D)

1. The State Boards shall follow the following guidelines in enforcing the standards specified under Schedule VI:

(a)In case of cement plants, the total dust (from all sections) shall be within 400 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] and 250 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] for the plants upto 200 t/d and more than 200 t/d capacities respectively.(b)In respect of calcination process (e.g., aluminium plants), Kilns and Step Grate Bagasse-fired-Boilers, the Particulate Matter (PM) emissions shall be within 250 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).].(c)In case of thermal power plants commissioned prior to 1-1-1982 and having generation capacity less than 62.5 MW, the PM emission shall be within 350 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).].(d)In case of Lime Kilns of capacity more than 5t/day and up to 40t/day, the PM emission shall be within 500 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).].(e)In case of horse shoe/Pulsating Grate and Spreader Stroker Bagasse-fired-Boilers, the PM emission shall be within 500 (12%CD2) and 800 (12% CO2) mg/[Nm³] respectively. In respect of these boilers, if more than attached to a single stack, the emission standard shall be fixed, based on added capacity of all the boilers connected with the stack.(f)In case of asbestos dust, the same shall not exceed 2 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).].(g)In case of the urea plants commissioned after 1-1-1982, coke ovens and lead glass units, the PM emission shall be within 50 mg/[Nm³].(h)In case of small boilers of capacity less than 2 tons/hr and between 2 to 5 tons/hr the PM emissions shall be within 1600 and 1200 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).].(i)In case of integrated Iron and Steel Plants, PM emission up to 400 mg/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).] shall be allowed during oxygen lancing.(j)In case of stone crushing units, the suspended PM contribution value at a distance of 40 metres from a controlled, isolated as well as from a unit located in the cluster should be less than 600 micrograms/[Nm³] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).].[***] [Omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]These units must also adopt the following pollution control measures:-(i)Dust containment-cum-suppression system for the equipment;(ii)Construction of wind breaking walls;(iii)Construction of the metalled roads within the premises;(iv)Regular cleaning and wetting of the ground within the premises;(v)Growing of a green belt along the periphery.(k)In case of ceramic industry, form the other sources of pollution, such as basic raw material and processing operations, heat recovery dryers, mechanical finishing operation, all possible preventive measures should be taken to control PM emissions as far as practicable.

2. The total fluoride emissions in respect of Glass and Phosphatic Fertilizers shall not exceed 5 mg/NM³ and 25 mg/NM³ respectively.

3. [In case of copper, lead and zinc smelting, the off-gases may, as far as possible, be utilised for manufacturing sulphuric acid.] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]

4. [In case of cupolas (Foundries) having capacity (melting rate) less than 3 tonne/hour, the particulate matter emission shall be within 450 mg/Nm³. In these cases it is essential that stack is constructed over the cupola beyond the charging door and the emissions are directed through the stack, which should be at least six times the diameter of cupola. In respect of Arc Furnaces and Induction Furnaces, provision has to be made for collecting the fumes before discharging the emissions through the stack.] [Added by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]

[SCHEDULE VII [Substituted by Notification No. G.S.R. 826 (E) dated 16.11.2009 (w.e.f. 19.11.1986)][See rule 3(3-B)]NATIONAL AMBIENT AIR QUALITY STANDARDS

S.No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified byCentral Government)	Methods of Measurement			
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO2), µg/m3	Annual*24 hours**	5080	2080	- Improved West and Gaeke- Ultraviolet fluorescence
2	Nitrogen Dioxide (NO2), µg/m3	Annual*24 hours**	4080	3080	- Modified Jacob Hochheiser (Na-Arsenite)-Ultraviolet fluorescence
3	Particulate Matter (size less than 10µm) or PM10µg/m3	Annual*24 hours**	60100	60100	- Gravimetric- TOEM- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM2.5µg/m3	Annual*24 hours**	4060	4060	- Gravimetric- TOEM- Beta attenuation
5	Ozone(O3) µg/m3	8 hours**1 hour**	100180	100180	- UV photometric- Chemi Iminescence- Chemical Method
6	Lead(Pb) µg/m3	Annual*24 hour**	0.501.0	0.501.0	- AAS/ICP method after sampling on EPM 2000 or equivalentfilter paper- ED-XRF using

					Teflon filter
7	Carbon Monoxide (CO) mg/m3	8 hours**1 hour**	0204	0204	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia(NH3)µg/m3	Annual*24 hours**	100400	100400	- Chemiluminescence-Indophenol blue method
9	Benzene(C6H6) µg/m3	Annual*	05	05	- Gas chromatography based continuous analyzer-Adsorptionand Desorption followed by GC analysis
10	Benzo(❑) Pyrene (BaP) - particulate phase only, ng/m3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic(As), ng/m3	Annual*	06	06	- AAS/ICP method after sampling on EPM 2000 or equivalentfilter paper
12	Nickel (Ni), ng/m3	Annual*	20	20	- AAS/ICP method after sampling on EPM 2000 or equivalentfilter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.Note - Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.]Substituted by Notification No. G.S.R. 826 (E) dated 16.11.2009 (w.e.f. 19.11.1986)[Inserted by G.S.R. 272(E), dated 5.5.2005 (w.e.f. 5.5.2005).]

[SCHEDULE VII]

[Inserted by G.S.R. 176(E), dated 2.4.1996 (w.e.f. 3.4.1996).][See rule 3(3-B)]NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS){|

Pollutant

	Time Weighted Average	Concentration in Ambient Air			
		Industrial Area	Residential, Rural and Other Area	Sensitive Area	Method of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
SulphurDioxide	Annual Average*	80µg/m3	60µg/m3	15µg/m3	- Improved West and Greke method
(SO)2	24hours**	120µg/m3	80µg/m3	30µg/m3	- Ultraviolet Fluorescence
Oxides of nitrogen as No2	Annual Average	80µg/m3	60µg/m3	15µg/m3	- Jacab and Hochheiser modified (Na-Arsenite) Method
	24hours**	120µg/m3	80µg/m3	30µg/m3	- Gas Phase Chemiluminescence
Suspended Particulate Matter (SPM)	Annual Average*	360µg/m3	140µg/m3	70µg/m3	- High Volume Sampling
	24hours**	500µg/m3	200µg/m3	100µg/m3	- [Average flow rate not less than1.1m3/minute]
RespirableParticulate Matter (size less than 10 um) (RPM)	Annual Average*	120µg/m3	60µg/m3	50µg/m3	- Respirable Particulate matter sampler.
	24hours**	150µg/m3	100µg/m3	75µg/m3	
Lead (Pb)	Annual Average*	1.0µg/m3	0.75µg/m3	0.50gg/m3	- AAS method after sampling using
	24hours**	1.5µg/m3	1.00g/m3	0.75µg /m3	EMP 2000 or equivalent filter paper.
Carbon	8hours**	5.0mg/m3	2.0mg/m3	1.0mg/m3	- Non-dispersive, infrared spectroscopy.
Monoxide	1hour	10.0mg/m3	4.0mg/m3	2.0mg/m3	

*Annual Arithmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval.**24 hourly/8 hourly values shall be met 98% of the time in a year. 2% of the time, it may exceed but not on two consecutive days.Notes.- 1. National Ambient Air Quality Standard: The levels of a air quality necessary with an adequate margin of safety, to protect the public health, vegetation and property.

2. Whenever and wherever two consecutive values exceeds the limit specified above for the respective category, it shall be considered adequate reason to institute regular/continuous monitoring and further investigations.

|}APPENDIX AFORM I(See rule 7)NOTICE OF INTENTION TO HAVE SAMPLE ANALYSEDTo.....Take notice that it is intended to have analysed the sample of* .....which has been taken today, the .....day of..... 20..... from* ..... (Name and designation of the person who takes the sample).(Seal)Date .....*Specify the place from where the sample is taken.FORM II(See rule 8)MEMORANDUM TO GOVERNMENT ANALYSTFrom.....ToThe Government Analyst.....The portion of sample described below is sent herewith for analysis under rule 6 of the Environment (Protection) Rules, 1986.The portion of the sample has been marked by me with the following mark:Details of the portion of samples taken.Name and designation of person who sends the sample(SEAL)Date .....FORM III(See rule 8)REPORT BY GOVERNMENT ANALYSTReport No. .....Date .....I hereby certify that I .....Government Analyst duly appointed under section 13 of the Environment (Protection) Act, 1986 received on the .....day of ..... 20..... from .....*.....a sample of .....for analysis.The sample was in a condition fit for analysis as reported below.I further certify that I have analysed the aforementioned sample on .....and declare that the result of the analysis to be as follows:**.....condition of seals, fastening of samples on receipt was as follows:Signed this .....day of.....20.....Address .....Signature(Government Analyst)To.....*Here write the names of the officer/authority from whom sample was obtained.**Here write full details of analysis and method of analysis.FORM IV(See rule 11)FORM OF NOTICEBy registered post-acknowledgment dueFrom (1)Shri.....To.....under section 19(b) of the Environment (Protection) Act, 1986Whereas an offence under the Environment (Protection) Act, 1986 (29 of 1986) has been committed/is being committed by .....(2) I/We hereby give notice of 60 days under section 19(b) of Environment (Protection) Act, 1986 (29 of 1986) of my/our intention to file a complaint in the Court against .....(3) for violation of section.....of the Environment (Protection) Act, 1986 (29 of 1986).In support of my/our notice, I am/we are enclosing the following documents (3) as evidence of proof of violation of the Environment (Protection) Act, 1986 (29 of 1986).Place .....Date .....Signature(s)Explanation. - (1) In case the notice is given in the name of a company, documentary evidence authorising the

person to sign the notice on behalf of the company shall be enclosed to this notice.Company for this purpose means a company defined in the Explanation to sub-rule (6) of rule 4.(2)Here give the name and address of the alleged offender. In case of a manufacturing/processing/operating unit, indicate the name/location/nature of activity, etc.(3)Documentary evidence shall include photographs/technical reports/health reports of the area, etc., for enabling enquiry into the alleged violation/offence.[FORM V] [Substituted by G.S.R. 386(E), dated 22-4-1993 (w.e.f. 22-4-1993). Earlier it was inserted by G.S.R. 329(E), dated 13-3-1992 (w.e.f. 13-3-1992)](See rule 14)Environmental Statement for the financial year ending the 31st March,.....

Part A

(i)Name and address of the owner/occupier of the industry operation or process.(ii)Industry category Primary-(STC Code) Secondary-(SIC Code).(iii)Production capacity-Units-(iv)Year of establishment.(v)Date of the last environmental statement submitted.

Part B

Water and Raw Material Consumption(1)Water consumption m^3/dProcessCoolingDomestic

Name of products	Process water consumption per unit of product output	
	During the previous financial year	During the current financial year
(1)		
(2)		
(3)		

(2)Raw material consumption

*Name of raw materials	Name of products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial year

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

Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations ofpollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with

	reasons
(a) Water	
(b) Air	

Part D

Hazardous Wastes(As specified under Hazardous Wastes (Management and Handling) Rules, 1989)

Hazardous Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
(a) From process		
(b) From pollution control facilities.		

Part E

Solid Wastes

	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
(a) From process		
(b) From pollution control facility		
(c) (1) Quantity recycled or re-utilised within the unit		
(2) Sold		
(3) Disposed		

Part F

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

Part G

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

Part H

Additional measures/investment proposal for environmental protection including abatement of

pollution, prevention of pollution.

Part I

Any other particulars for improving the quality of the environment.