

Environment (Protection) Rules, 1986

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Environment (Protection) Rules, 1986

Rule ENVIRONMENT-PROTECTION-RULES-1986 of 1986

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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 12th March, 2022 [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 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 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)[Use of coal by Thermal Power Plants, without stipulations as regards ash content of distance, shall be permitted subject to following conditions:(1)Setting Up Technology Solution for emission norms: - (i) Compliance of specified emission norms for Particulate Matter, as per extant notifications and instructions of Central Pollution Control Board, issued from time to time.(ii)[In case of coal washeries, middling and rejects to be utilised in any Thermal Power Plants, subject to the said Thermal Power Plant complying with the stipulated emission and fly ash norms as specified in Ministry of Environment, Forest and Climate Change notification number S.O. 3305 (E) dated the 7th December, 2015, read with the notification number S.O. 763 (E), dated the 14th September, 1999 and its amendments [vide numbers S.O. 979 (E), dated the 27th August, 2003, S.O. 2804 (E), dated the 3rd November, 2009 and S.O. 254(E) dated 25th January, 2016] and related subsequent notifications and amendments issued from time to time.](2)Management of Ash Ponds: - (i) The thermal powers plants shall comply with conditions, as notified in the Fly Ash notification issued from time to time, without being entitled to additional capacity of fly ash pond (for existing power generation capacity) on ground of switching from washed coal to unwashed coal.(ii)Appropriate Technology solutions shall be applied to optimise water consumption for Ash management;(iii)The segregation of ash may be done at the Electro-static Precipitator stage, if required, based on site specific conditions, to ensure maximum utilization of fly ash;(iv)Subject to 2(i) above, the thermal power plants to dispose fly ash in abandoned or working mines (to be facilitated by mine owner) with environment safeguards.(3)Transportation: - (i) Coal transportation may be undertaken by covered Railway wagon (railway wagons covered by tarpaulin or other means) and/or covered conveyer beyond the mine area. However, till such time enabling Rail transport/conveyer infrastructure is not available, road transportation may be undertaken in trucks, covered by tarpaulin or other means.(ii)It shall be ensured by the thermal power plant that -(a)Rail siding facility or conveyor facility is set up at or near the power plant, for transportation by rail or conveyor; and(b)If transportation by rail or conveyor facility is not available, ensure that the coal is transported out from the Delivery Point of the respective mine in covered trucks (by tarpaulin or other means), or any mechanized closed trucks by road.(4)This shall also be deemed to be additional conditions of the relevant Environment Clearances for respective projects for financial year 2020-21 and onwards. The existing Environmental Clearances shall stand modified so as to make the above conditions operative for relevant sectors. The Consent to Operate shall be issued by respective State Pollution Control Boards accordingly.] [Substituted by Notification No. S.O. 1561(E), dated 21.3.2020 (w.e.f. 19.11.1986).]

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, in charge 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 [seven hundred and twenty 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. [Provided that for the purpose of this clause, the period of national lockdown from 25th March, 2020 to 31st May, 2020 on account of COVID-19 pandemic shall be excluded for the purpose of counting the number of days for publication of the final rule or order or notification.] [Inserted by Notification No. S.O. 3235(E), dated 22.9.2020.](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	Total concentration of mercury in the final effluent*	Concentration not to exceed, milligramme per litre (except for pH and flow) 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. [[Substituted by Notification No. G.S.R. 1095(E), dated 9.11.2018.]	Man-Made Fibre	A. Effluent Standards	Concentration not to exceed, (in mg/l exceptfor pH and recovery of Sodium Sulphate)

Inland Surface Water

	Land for Irrigation	Marine Discharge	
pH	6.0-8.5	6.0-8.5	6.0-8.5
Suspended Solids (SS)	100	100	100
Biochemical Oxygen Demand (BOD - 3 days at 27°C)	30	100	100
Zinc	5	5	15

Note: The recovery of Sodium Sulphate shall not be less than 60% in Viscose Staple Fibre and Viscose Filament Yarn units.

B. Emission Standards

	Concentration not to exceed, (in mg/Nm ³)
Volatile Organic Compounds including Dimethyl Formamide and Acrylonitrile (applicable for Acrylic fibre units only)	50

Note: (a) The concentration of Carbon Disulphide (CS₂) and Hydrogen Sulphide (H₂S) in work environment shall not exceed 10 ppm, individually. (b) The stack height shall be calculated $H = 11 Q^{0.41} / (3 V_s D U)$, where Q - Emission rate of Carbon Disulphide, kg/hr; V_s - stack exit velocity, m/sec; D - diameter of stack, m; U - Annual average wind speed at top of stack, m/sec. (c) For new plants built after 31st December, 1998, a minimum of 80% of total emission shall pass through stacks and if the calculated stack height is less than 30 metres, a minimum height of 30 metres shall be provided, and in case there are more than one stack existing in the plant, following conditions may be met :
 -(i) the required height of all stacks shall be based on the maximum emission rate in any of the stacks i.e. the stacks emitting CS₂ emission shall be of same heights (based on the maximum emission rate); (ii) number of stacks shall not be increased as existing on 31st December, 1998, however, the number of stacks may be reduced by the industry; (iii) the distance between two nearest stacks should be at least three times of height of taller stack, in metres and if distance

between two stacks is less, emission being emitted through such two stacks shall be considered as a single point source and height of the stacks shall be calculated considering emissions are being emitted through one stack; (iv) the industry shall install three air quality monitoring stations on the periphery (within boundary limits) of plant so as to monitor concentration of CS₂ and H₂S in ambient air and the location of these stations shall be decided in consultation with concerned State Pollution Control Board, however in any case levels of CS₂ and H₂S (24 hours daily average) shall not exceed 100 µg/m³ and 150 µg/m³ respectively.]

|-| 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/l 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. [BOD₃ days, 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)] o. [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)] o. [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. 19.11.1986)] 5. [0] [Substituted by Notification 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)] o. [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)] o. [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)] o. [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/l] [Substituted by Notification No. G.S.R. 186 (E) dated 18.3.2008 (w.e.f. 19.11.1986)]}]

[B. Emissions
[Substituted by
Notification No.
G.S.R. 186 (E)
dated 18.3.2008
(w.e.f.
19.11.1986)]
Limiting
concentration in
mg/Nm, unless
stated
Fuel Type

			Existing refineries	New Refinery/Furnace/Boiler
(Furnace, Boiler and captive Power Plant)	SulphurDioxide (SO ₂)	Gas	50	50
Liquid	1700	850		
Oxides of Nitrogen (NO _x)	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 (Ni+V)	Liquid	5	5	
Hydrogen Sulphide(H ₂ S) 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 NO_x. 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 (NO _x)	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 SO₂ and NO_x. 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 be considered as non-compliance.

(iv) Data on Sulphur (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)]	Sulphur recovery, %	Above 20	98.7	99.5
	H ₂ S mg/Nm ³ ,		15	10
	Sulphur recovery, %	5-20	96	98
	Sulphur recovery, %	1-5	94	96
	Oxides of Nitrogen NO _x , mg/Nm ³	All capacity	350	250
	Carbon Monoxide (CO), mg/Nm ³	All capacity	150	100
Notes. -				

- (i) Sulphur recovery units having capacity above 20 tonnes per day shall have continuous systems for monitoring of SO₂. Manual monitoring for all the emission parameters shall be carried out once in a month.
- (ii) Data on Sulphur Dioxide emissions (mg/Nm³) shall be reported regularly.
- (iii) Sulphur recovery efficiency shall be calculated on monthly basis, using quantity of sulphur in the feed to SRU and quantity of sulphur recovered.

C. Fugitive Emission Storage of Volatile Liquids: General Petroleum Products (1) Storage tanks with capacity between 4 to 75 m³ 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 m³ 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/m ³	(ii)	5
Benzene:		
(i) VOC reduction, %	(i)	99.99
(ii) Emission, mg/m ³	(ii)	20
Toluene/Xylene:		
(i) VOC reduction, %	(i)	99.98
(ii) Emission, mg/m ³	(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 be 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 be 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 leak: 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. January 01, 2009
Pump/Compressor	10000	5000	3000	2000
Valves/Flanges	10000	3000	2000	1000
Other 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.]

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
27°C], 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 (oncethrough cooling system)	pH	6.5- 8.5
	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

I, II sic][III. Specific water consumption shall not exceed maximum of 3.0 m³/MWh for new plants installed after the 1st January, 2017 and these plants shall also achieve zero waste water discharge.] [Substituted by Notification No. G.S.R. 593(E), dated 28.6.2018.]

5B. [Thermal Power Plant

(water consumption limit)

using sea water [Inserted by
Notification No. G.S.R. 593 (E),
dated 28.6.2018.]

Water consumption

Items I to III in column 4 in serial number 5A
above shall not be applicable to the Thermal
Power Plants using sea water;]

[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/ Carpets/Polyester, Units having Printing/ Dyeing/ Bleaching process ormanufacturing and Garment units.	TREATEDEFFLUENTS	Maximumconcentration values in mg/l except for pH, colour, and SAR
	pH	6.5to 8.5	
	SuspendedSolids	100	
	Colour,P.C.U. (Platinum Cobalt Units)	150	
	Bio-ChemicalOxygen DemoC](BOD ₃)	30	
	Oiland Grease	10	
		250	

ChemicalOxygen Demand (COD)	
TotalChromium as (Cr)	2.0
Sulphide(as S)	2.0
PhenolicCompounds (as C ₆ H ₅ OH)	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	<p>Concentration not to exceed, milligramme per litre(except for pH and bio-assay)</p> <p>Common:</p> <p>Suspended solids</p> <p>PH</p> <p>[BOD (3 days at 27°C)] [Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]</p> <p>Oil and grease</p> <p>Bio-assay</p> <p>Special:</p> <p>Total chromium (as Cr)</p> <p>Sulphide(as S)</p> <p>PhenolicCompounds (as C₆H₅OH)</p>	<p>100</p> <p>5.5 - 9.0</p> <p>100</p> <p>10</p> <p>90% survival of fish after 96 hours</p> <p>2</p> <p>2</p> <p>5</p>
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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 Dye Intermediate Industry	A.Emission Standards (Process)	Limiting concentration in milligramme/Normal cubic metre (mg/Nm ³), unless otherwise stated

Oxides of Sulphur(SO _x)	200
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HCl (Acid Mist)	35
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Ammonia (NH ₃)	30
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Chlorine (Cl ₂)	15
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Note: All process vents shall have chimney height of at least two metres above the shed or building where equipment is installed.

B. Effluent Standards

	Limiting concentration not to exceed in milligramme/litre (mg/l), except for pH, Temperature, Colour and Bioassay.		
	disposal in surface water	marine disposal	on land for irrigation
pH	6.0 to 8.5	5.5 – 9.0	5.5 – 9.0
Suspended Solids	100	-	200
Biochemical Oxygen Demand - BOD (3 days, 27°C)	30	100	100
Chemical Oxygen Demand (COD)	250	250	-
Ammonical Nitrogen as N	50	50	-
Temperature	shall not exceed 5°C - above the receiving		

	water		
Colour (Hazenunit)	400	-	-
Mercury (Hg)	0.01	0.01	-
Hexavalent Chromium (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 (SO ₄ ²⁻)	1000	-	-
Phenolic Compounds as C ₆ H ₅ OH	1.0	5.0	-
Oil Grease	10.0	10.0	10.0
Bio-assay Test (with 1:8 dilution of effluents)	90% survival of Test 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 or through a CETP, the industry or, CETP as the case may be, shall be required to install piezometers for monitoring of groundwater. At least, two piezometers for three hectares shall be installed for a plot size above 10 hectares with a minimum of 16 piezometers. It shall be one per hectare within a minimum of six piezometers for a plot of size smaller than 10 hectares, in consultation with the concerned State Pollution Control Board for siting of piezometers. (ii) The standards for Chloride and Sulphate shall be applicable only for discharge of treated effluent into inland surface water courses. However, when discharged on land for irrigation, the norms for Chloride shall not be more than 600 mg/l over and above the

contents of rawwater and the Sodium Absorption Ratio (SAR) shall not exceed 26. (iii) Treated /untreated effluent shall be stored in holding tank(s) in such a manner which would not cause pollution of groundwater.

C. Emission Standards for Captive Incinerator

	Limiting concentration in mg/Nm ³ , unless otherwise stated	Sampling Duration in minutes unless otherwise stated
Paticulate Matter	50	30 or more (for sampling of 300 litres of emission)
HCl (Acid Mist)	50	30
SO ₂	200	30
Carbon Monoxide	100	daily average
Total Organic Carbon	20	30
Total Dioxins And Furans	0.1 ng TEQ/Nm ³	8 hours
Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V+Cd+Th+Hg and their compounds	1.5	2 hours

Note: i. All monitored values shall be corrected to 11% oxygen on dry basis. ii. The CO₂ concentration in tail gas shall not be less than 7%. iii. In case, halogenated organic waste is less than 1% by weight in input waste, all the facilities in twin chamber incinerator shall be designed so as to achieve a minimum temperature of 850 ± 25°C in primary chamber and 950°C in secondary combustion chamber and with a gas residence time in secondary combustion chamber not less than two seconds. or All the facilities in single chamber incinerator for gaseous hazardous waste shall be designed so as to achieve a minimum temperature of 950 °C in the

combustion chamber with a gas residence time not less than two seconds. iv. In case halogenated organic waste is more than 1% by weight in input waste, waste shall be incinerated only in twin chamber incinerators and all the facilities shall be designed to achieve a minimum temperature of $850 \pm 250^\circ\text{C}$ in primary chamber and 1100°C in secondary combustion chamber with a gas residence time in secondary combustion chamber not less than two seconds. v. Scrubber meant for scrubbing emissions from incinerator shall not be used as quencher. vi. Incineration plants shall be operated, (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 the loss on ignition for ash and residue is less than 5% of the dry weight. In case of non-conformity, ash and residue, as the case may be, shall be re-incinerated. vii. The incinerator shall have a chimney of at least thirty metres height.

D. Effluent Standards for Incinerator

Note: (i) Effluent from scrubber (s) and floor washing shall flow through closed conduit or pipe network and be treated to comply with the effluent standards mentioned at 'B' above. (ii) The built up in Total Dissolved Solids (TDS) in wastewater of floor washings shall not exceed 1000 mg/l over and above the TDS of raw water used.

E. Stormwater

Note: (i) Stormwater shall not be allowed to mix with scrubber water and/or floor washings. (ii) Stormwater shall be channelized through separate drains passing through 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)]

(1)

(2)

(3)

(4)

9

Electroplating, Anodizing
Industry A-Effluent Standards

Limiting Concentration
in mg/l, except
for pH and
Temperature

(i) Compulsory Parameters

pH

6.0 to 9.0

Shall not
exceed 5°C
above the
ambient
temperature of
the receiving
body

Temperature

Oil and Grease

10

Suspended Solids

100

Total Metal*

10

Trichloroethane

0.1

Trichloroethane

0.1

(ii) Specific Parameter as per process

a. Nickel and Chrome plating

Ammonical Nitrogen, as N

50

Nickle, as Ni

Hexavalent Chromium, as Cr

0.1

Total Chromium, as Cr

2

Sulphides, as S	2
Sulphates, as SO ₄ -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 SO ₄ 2-	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 (HClH₂SO₄)** 50

(ii) Specific parameters as per process

a. Nickel Chromium plating

Nickel** 5

Hexavalent Chromium** 0.5

b. Zinc, Copper or Cadmium plating

Lead** 10

Cyanides, (Total)** 5

* 'Total Metal' shall account for combined concentration

of Zn+Cu+Ni+Al+Fe+Cr+Cd+Pd+Sn+Ag in the effluent. + Emission standards shall be applicable to electroplating units having water consumption at least 5 m³/day. These units shall channelize their emission through a stack or chimney having height at least 10 metres above ground level or 3 metres above top of shed or building of the unit, whichever is more. ** The existing units shall comply with the norms of asterisked pollutants by 1st January 2013. However, new units shall comply with the norms with effect from commissioning of plant.

C. Stormwater

Note : (i) Stormwater for a unit (having plot size at least 200 square metres) shall not be allowed to mix with scrubber water, effluent and/or floor washings. (ii) Stormwater within the battery limits of a unit shall be channelized through separate drain/pipe passing through a High Density Polyethylene (HDPE) lined pit having holding capacity of ten minutes (Hourly average) of rainfall.]

[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 Clinker Grinding Plant or, Blending Plant	A – Emission Standards	

(i) Rotary Kiln
–without co

processing

	Date of Commissioning	Location	Concentration not to exceed, in mg/Nm ³
	(a)	(b)	(c)
Sulphur Dioxide (SO ₂) in mg/ Nm ³	Irrespective of date of commissioning	Anywhere in the country	100, 700 and 1000 when pyritic sulphur in the limestone is less than 0.25%, 0.25 to 0.5% and more than 0.5% respectively.
Oxides of Nitrogen (NO _x) in mg/ Nm ³	After the date of notification (25.8.2014)	Anywhere in the country	(1) 600 (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.
	Before the date of notification (25.8.2014)	Anywhere in the country	

(i)The timeline for implementation of emission standards for all the parameters i.e. Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) 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 'NO_x' 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 A- Emission Standards of wastes

Rotary Kiln - with co-processing of Wastes

	Date of Commissioning	Location	Concentration not to exceed, in mg/ Nm ³
	(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 population above 1.0 lakh or within its periphery of 5.0 kilometer radius	30	
	other than critically polluted area or urban centres	30	
SO ₂ *	irrespective of date of commissioning	anywhere in the country	100, 700 and 1000 when pyritic sulphur in the limestone is less than 0.25%, 0.25 to 0.5% and more than 0.5% respectively.
NO _x *	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 SLC technology alone or without calciner.	
		HCl	10 mg/ Nm ³
HF	1 mg/ Nm ³		
TOC	10 mg/ Nm ³ **		
Hg and its compounds	0.05 mg/ Nm ³		
Cd + Tl and their compounds	0.05 mg/ Nm ³		
Sb + As + Pb + Co + Cr + Cu + Mn + Ni + V	0.5 mg/ Nm ³		

and their
compounds

Dioxins and
Furans

0.1 ngTEQ/ Nm³

Note: The abbreviations used in the Table shall mean as under: SO₂- Sulphur dioxide; NO_x- Oxides of Nitrogen; HCl - Hydrogen Chloride; HF - Hydrogen Fluoride; 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 and timeline for implementation in respect of PM, SO₂ and NO_x shall be governed in accordance with the provisions under notification published vide GSR No. 612 (E), dated the 25th August, 2014 and amended from time to time.** Permitting authority may prescribe separate standards on case to case basis, if Total Organic Carbon (TOC) does not result from the co-processing of waste. The height of each individual stack connected to Kiln, Clinker Cooler, Cement Mill, Coal Mill, Raw Mill, Packaging section, etc. shall be of a minimum of 30 metres or, as per the formula $H = 14 (Q_1)^{0.3} \text{ and } H = 74 (Q_2)^{0.27}$ whichever is more, where "H" is the height of stack in metres and "Q₁" is the maximum quantity of SO₂ expected to be emitted in kg/hr and "Q₂" is the maximum quantity of PM expected to be emitted in tonnes/hr through the stack at 100 percent rated capacity of the plant; The monitored values of SO₂, NO_x, HCl, HF, TOC, Metals and Dioxins and Furans at main kiln stack shall be corrected to 10% Oxygen, on dry basis and the norms for SO₂, NO_x, HCl, HF, TOC, Metals and Dioxins and Furans shall be applicable to main kiln stack and the norms for Particulate Matter (PM) shall be applicable to all the stacks in the plant. PM, SO₂, NO_x shall 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 used as

quencher and plants having separate stack for gaseous emission for the scrubbing unit, the height of this stack shall be 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 to discharge service wastewater, the following norms shall be complied with:

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

C - Storm water Storm-water shall not be allowed to mix with effluent, treated sewage, scrubber water and/or floor washings. Storm-water within battery limits of industry shall be channelized 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 crushing unit]	Suspended particulate matter	measured between 3 metres and 60 metres from any process equipment of a stone crushing unit shall not exceed 600 micro-grammes per cubic metre.
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[* * *]

13. [Rubber Processing and Rubber Product Industry] A. Effluent Standards (i) Natural Rubber Processing : Centrifuging and Creaming Units
 [Substituted by Notification No. G.S.R. 221 (E) dated 18.3.2011]

(w.e.f.
19.11.1986)]

Limiting value for concentration in
mg/l, except for pH

	Inland Surface Water	Land for Irrigation Public Sewer
pH	6.0-8.5	6.0-8.5
Suspended Solids	100	200
BOD, 3 days at 27°C	30	100
COD	250	-
Oil and Grease	10	10
Total Kjeldahl Nitrogen, as N	100	*
Free Ammonia	5	*
Ammonical Nitrogen, as N	50	*
Sulphides, as S	2	*
Total Dissolved Solids	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 at 27°C	30	100
COD	250	*
Oil and Grease	10	10
Total Kjeldahl Nitrogen, as N	50	*
Ammonical Nitrogen, as N	25	*
Sulphides, as S	2	*
Total Dissolved Solids	2100	2100
(iii) Rubber Products (Moulded, Extruded or Calendered/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 at 27°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 at 27°C	50	*
COD	250	*
Oil and Grease	10	10

*Norms for these parameters shall be prescribed by the concerned State Pollution Control Board/Pollution Control Committee on case basis.

B. Emission Standards* (Rubber Product Industry i.e. Moulded, Extruded or Calendered/Fabricated/Rubber Reclamation Unit/Latex based Unit)

Concentration
not to exceed in
mg/Nm³

Particulate Matter	150
Volatile Organic Compounds	50

*These emission standards shall not be applicable to SSI units.

NOTE :

All rubber units shall channelize their fugitive emission through a stack having height of 12 metres or 2 metres above roof top of shed/building whichever is more.]

14. Small Pulp and Paper Industry	Concentration not to exceed milligramme per litre (except for pH and sodium absorption ratio)	
	*Discharge into inland 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 Absorption Ratio	26
	[Absorbable Organic Halogens (AOX) in effluent discharge]	3.00 kg/ton of paper produced with effect from the date of publication of this notification
	[Inserted by Notification No. G.S.R. 546(E), dated 30.8.2005 (w.e.f. 19.11.1986).]	2.00 kg/ton of paper produced with effect from 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, Maltries and Breweries)	Concentration in the effluent not to exceed milligramme per litre (except for pH and colour and odour)	
	pH	5.5 - 9.0
	Colour and 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	30 mg/l

water/river/streams

- Disposal on land or for irrigation 100 mg/l.]

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).]

[***] [Omitted 'serial no. 16' by Notification No. G.S.R. 47(E), dated 24.1.2020.]

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16. Leather Tanneries	Concentration in the effluent not to exceed milligramme per litre (except for pH and per cent sodium)			
	Inland Surface Waters	Public Sewers	Land for Irrigation	Marine Coastal Areas
	(a)	(b)	(c)	(d)
Suspended Solids	100	600	200	100
[BOD (3 days at 27°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 (as Cr)	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

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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 Fertilizer Plant/Ammonia (Urea Plant),
Calcium Ammonium Nitrate and Ammonium Nitrate Fertilizers

Limiting
concentration
not to exceed
in milligram/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 / or NP/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 Vanadium and Arsenic once in a year and analysis report shall be submitted to the concerned State Pollution Control Board / Pollution Control Committee.		
B. - Emission Standards		
(i) Straight Nitrogenous		
(a) Ammonia Plant- Reformer		
Oxides of Nitrogen (as NO ₂)	400 mg/Nm ³	
(b) Urea Plant – Prilling Tower		
Particulate Matter	Pre 1982 units	150 mg/Nm ³

Post 1982 units	50 mg/Nm ³ **	
(ii) Ammonium Nitrate/ Calcium AmmoniumNitrate/NPK plant		
Particulate Matter	Existing Plant	150 mg/Nm ³
New Plant	100 mg/ Nm ³	
Ammonium as NH ₃	Existing Plant	300 mg/Nm ³
New Plant	150 mg/Nm ³	
Total Fluoride as F-	10 mg/Nm ³ (only NPK Plant)	
(iii) Phosphatic Fertilizer Plants –Phosphoric Acid Plants/ Rock grinding and Acidulation SSP Plants		
Particulate Matter	125 mg/Nm ³	
Total Fluoride as F-	20 mg/Nm ³	
(iv) Nitric Acid Plant		
Oxides of Nitrogen (as NO ₂)	400 mg/Nm ³	

*Values to bereported at 3% O₂** Total emission of 0.5 kg/ tonne of product. Note: (i) Fluoride norms shall be applicable only for NPK plant. (ii) Plant commissioned on or after the date of notification, shall be treated as 'New Plant'. (iii) The height of the stack emitting Sulphur Dioxide, Oxides of Nitrogen or Oxides of Phosphorus or acid mist shall be a minimum of 30 metres or as 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 SO₂ NO_x or P₂O₅ equivalent expected to be emitted in kg/hr through the stack at 100 per cent rated capacity of the tail gas plant(s) and calculated as per the norms of gaseous emission. (iv) Tail Gas plants having more than one stream or unit of Sulphuric Acid, Nitric Acid or Phosphoric Acid at one location, the combined capacity of all the streams or units for a particular acid shall be taken into consideration for determining the stack height and applicability of emission standards individually. (iii) Tail gas plants having separate stack for gaseous emission for the scrubbing unit, the height of this stack shall be equal to main stack or 30 metres, whichever is higher.]

18. Iron Ore Mining and Ore Processing	A. Emission Standards for Stack for De-dusting Unit
Particulate matter	100 mg/Nm ³
Stack height**	15.0 m

**Stack height for De-dusting unit shall be

calculated as $H=74 Q^{0.27}$,
where H and Q are stack
height in metre and
particulate matter (PM)
emission in tonner/hr
respectively, i.e.

Q(kg/hr) Up to 2.712.72 –
7.867.87 – 17.9617.97 – H(metre) 15202530
35.29

Note:- Stack attached to
De-dusting unit shall have
minimum height of
15.0 metres and would be
at least 2.50 metres above
the top-most point of the
nearby building/shed or
plant in the mine.

B. Fugitive Emission Standards

Particulate matter 1200 μ 100 mg/Nm³

Note:- Fugitive emission
shall be monitored in the
predominant
downwind direction at a
distance of 25.0 + 2.0 metres
from the source of fugitive
emission as per following :

Area	Monitoring location
Mine face/Bench	Drilling excavation and loading applicable for operation benches above waterable Haul roads to ore processing plant,
Haul Roads/Service Roads	waste dumps and loading areas and service road
Crushing plant	Run-off mine unloading at hopper, crushing areas, screens and

	transfer points.	
Screening Plant	Screens, conveying and transportation of ore discharge points	
Ore Storage and Loading	Intermediate stockbin/pile areas ore stock bin/pile areas , wagon/truck loading areas	
Waste dump	Active waste/reject dumps	
C. Effluent Standards		
pH	5.5-9.0	
Suspended solids (non-rainy day)	50mg/l	
Suspended solids (rainy day)	100mg/l	
Oil and grease	10mg/l	
Note:-(I) All efforts shall be made to reuse and re-circulate the treated effluent. (ii) The aforesaid effluent standards shall be complied with for sewage, service water, beneficiation of ore wash water and surface run-off put together		
19. Calcium Carbide	Particulate Matter Emission :	
-Kiln	250 milligramme per normal cubic metre	
-Arc Furnace	150 milligramme per normal cubic metre	
20. Carbon Black	Particulate Matter Emission :	150 milligramme per normal cubic metre
21. [] Copper, Lead or Zinc Smelting Plant		Emission standards
		New Unit

a.			
Concentrator Existing Unit			
Particulate Matter(mg/Nm ³)	100	75	
b.			
Sulphur-Dioxide Recovery Unit Limiting Concentration in mg/Nm ³ Plant capacity for 100% convertible concentration of Sulphuric Acid (time/day)			
		Existing Unit	New Unit
Sulphur-Dioxide(So ₂)	Upto 300	1370	1250
Above 300	1250		950
Acid Mist/Sulphur Trioxide	Upto 300	90	70
Above 300	70		50

Note:-1. Capacity in above stipulation means the installed capacity of Sulphuric Acid Plant. 2. Scrubbing units shall have on-line pH meters with auto recording facility. 3. Plant commissioned on or after the date of notification, shall be termed as 'New Unit.' 4. The height of the Stack emitting Sulphur Dioxide or acid mist shall be a minimum of 30 meters or as 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 SO₂ in kg/hr, expected to be emitted through the stack at 110 per cent rated capacity of the

Tail Gas plant(s) and calculated as per the norms of gaseous emission. 5. Tail Gas plants having more than one stream or unit of sulphuric acid at one location, the combined capacity of all the streams or units shall be taken into consideration for determining the stack height and applicability of emission standards. 6. Tail Gas plants having separate stack for gaseous emission for the scrubbing unit, the height of this stack shall be equal to main stack or 30 metres, whichever is higher.

22. Nitric Acid (emission oxides of nitrogen)	Emission of Oxides of Nitrogen	3 kilogramme of oxides of nitrogen per tone of weak acid (before concentration) produced		
23. [Sulphuric Acid Plant]	Emission standards	Limiting concentration in mg/Nm ³ , unless stated		
		Plant capacity for 100% concentration of Sulphuric Acid (tonne/day)	Existing Unit	New Unit
	Sulphur dioxide	(SO ₂) 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 recording facility.

(ii) The height of the stack emitting sulphur-dioxide or acid mist shall be of minimum of 30 metre or

as per the formula $H = 14 \sqrt{Q}$ (whichever is more).

Where "H" is the Height of stack in metre; and "Q" is the maximum quantity of SO_2 expected to be emitted through the stack at 110 per cent rated capacity of the plants and calculated as per the norms of gaseous emission.

(iii) Plants having more than one stream or unit of sulphuric acid at one location, the combined capacity of all the streams and units shall be taken into consideration for determining the stack height and applicability of emission standards.

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

S.No.	Industry	Parameter	Standard
24.	Integrated Iron and Steel Plant	A-Coke oven (by-product type)	
a. Effluent Standards			
	Limiting concentration in mg/l, except for pH		
pH	6.0-8.50		
Suspended solids	100		
BOD, 3 days at 27°C	30		
COD	250		
Oil and grease	10		
Ammonical nitrogen as N	50		

Cyandie (as CN-) 0.2

Phenol 1.0

b. Emission Standards

	New Batteries (at green field site)	Rebuild Batteries	Existing Batteries
(i) Fugitive Visible Emission			
Leakage from door	5(PLD)*	10(PLD)*	10(PLD)*
Leakage from charging 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- Percent leaking
doors; **PLL-Percent
leaking lids;

+PLO- Percent Leaking off
takes and HPLA-
Aspiration through high
pressure liquor injection in
gooseneck.

(ii) (Stack Emission Standards)

SO ₂ (mg/Nm ³)	800	800	800
NO _x (mg/Nm ³)	500	500	500
Particulate matter (mg/Nm ³)	50	50	50
Particulate matter during charging of stamp charging batteries (mg/Nm ³)	25	25	25
Sulphur in COke Oven gas used for heating (mg/Nm ³)	800	-	-

(iii) Fugitive Emission: Benzo (a) Pyrene (BaP)

Battery area (top of the battery) (µg/m ³)	5	5	5
Other units in Coke oven plant (µg/m ³)	2	2	2

B.-Sintering Plant

a. Effluent Standards

Limiting concentration
in mg/l, except of

	pH
pH	6.0-8.50
Suspended solids	100
Oil and grease	10

b. Emission Standards

Particulate matter(mg/Nm ³)	150
---	-----

C.- Blast Furnace

a. Effluent Standards

	Limiting concentration in mg/l, except for pH
pH	6.0-8.05
Suspended solids(mg/l)	50
Oil and grease(mg/l)	10
Cyanide as CN(mg/l)	0.2
Ammonical Nitrogen as NH ₃ -N (mg/l)	50

b. Emission Standards

(i) Stack Emissions

	New Units	Existing Units
BF Stove		
Particulate matter(mg/Nm ³)	50	30
SO ₂ (mg/Nm ³)	250	200
Nox (mg/Nm ³)	150	150
CO (Vol/Vol)	1%(max)	1%(max)

(ii) Space Deducting/Other
Stacks of BF area

Particulate matter(mg/Nm ³)	100	50
---	-----	----

(iii) Fugitive Emission

	Existing Units	New Units
Particulate matter(Size less than 10 microns) PM ₁₀ (µg/m ³)	4000	3000
SO ₂ (µg/m ³)	200	150
NO _x (µg/m ³)	150	120

Carbon monoxide($\mu\text{g}/\text{m}^3$)- 8 hours	5000	5000
1hours	10,000	10,000
Lead, as Pb infugitive dust ($\mu\text{g}/\text{m}^3$) 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/Nm ³)		
- 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/Nm ³)	100	50
(ii) FugitiveEmission		
	ExistingUnits	NewUnits
Particulate matter(size less than 10 microns) PM ₁₀ ($\mu\text{g}/\text{m}^3$)	4000	3000
SO ₂ ($\mu\text{g}/\text{m}^3$)	200	150
NO _x ($\mu\text{g}/\text{m}^3$)- 8 hours	5,000	5,000
1 hours	10,000	10,000
Lead, as Pb indust at Converter floor ($\mu\text{g}/\text{m}^3$)	2	2
E- Rolling Mills		
a. EffluentStandards		

pH	6.0-9.0		
Suspended solids(mg/l)	100		
Oil and grease(mg/l)	10		
b. Emission Standards			
Particulate matter(mg/Nm ³)	150		
Re-Heating		Sensitive area	Other area
Particulate matter(mg/Nm ³)	150		250
F.- Arc Furnaces			
Emission Standards			
Particulate matter(mg/Nm ³)	150		
G.- Induction Furnaces			
Emission Standards			
Particulate matter(mg/Nm ³)	150		
H.- Cupola Foundry			
Emission Standards			
		melting capacity less than 3 tonne/hr	melting capacity 3 tonne/hr and above
Particulate matter(mg/Nm ³)	450		150
SO ₂ (mg/Nm ³)	300, corrected at 12% CO ₂		
I.- Calcination Plant/Lime Kiln/Dolomite Kiln			
Emission Standards			
		capacity upto 40t/day	capacity above 40t/day
Particulate matter(mg/Nm ³)	500		150
J.- Refractory Unit			
Emission Standards			
Particulate matter(mg/Nm ³)	150		
Note :1.The height of the each process stack shall be			

a minimum of 30 metres 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 emitted through the stack at rated capacity of the plant(s) and calculated as per the norms of gaseous emission. 2. The Plants having separate stack for gaseous emission for the scrubbing unit, the height of this stack shall be equal to main stack of the plant or 30 metres, whichever is higher. 3. It is essential that stack constructed over the cupola beyond the charging door and emissions shall be directed through the stack which should be at least six times the diameter of cupola. 4. In respect of Arc Furnaces and induction Furnaces provision shall be made for collecting the fumes before discharging the emissions through the stack. 5. Foundries shall install scrubber, followed by a stack of height at least six times the diameter of the Cupola beyond the charging door. 6. Recovery type converters shall be installed in new plants or expansion projects.

Note: (i) Stormwater shall not be allowed to mix with

effluent, scrubberwater
and/or floor washings.(ii)
Stormwater shall
be channellized through
separate drains as per
natural gradient, passing
through High Density
Polyethylene (HDPE) lined
pits, each having holding
capacity of 10 minutes
(hourly average) of rainfall.

25. [Thermal Power Plants] Particulate
Matter Emissions :

-generation capacity 210 MW or more	150 milligramme per normal cubic meter
-generation capacity less than 210 MW	350 milligramme per normal cubic meter

[Note: All monitored values
for SO₂, NO_x and
Particulate Matter shall be
corrected to 6% Oxygen, on
dry basis]. [Inserted by
Notification No. G.S.R. 593
(E), dated 28.6.2018.]

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. [(i) A task force shall be constituted by Central Pollution Control Board (CPCB) comprising of representative from Ministry of Environment and Forest and Climate Change, Ministry of Power, Central Electricity Authority (CEA) and CPCB to categorise thermal power plants in three categories as specified in the Table-I on the basis of their location to comply with the emission norms within the time limit as specified in column (4) of the Table- I, namely: -
[Substituted 'TPPs (units) shall meet the limits within two years from date of publication of this notification' by Notification No. G.S.R. 243(E), dated 31.3.2021.] Table-I

Sl. No.	Category	Location/area	Timelines for compliance
Non retiring units	Retiring units		

(1)	(2)	(3)	(4)	(5)
1	Category A	Within 10 km radius of National Capital Region or cities having million plus population ¹ .	Upto 31st December 2022	Upto 31st December 2022
2	Category B	Within 10 km radius of Critically Polluted Areas ² or Non-attainment cities ²	Upto 31st December 2023	Upto 31st December 2025
3	Category C	Other than those included in category A and B	Upto 31st December 2024	Upto 31st December 2025

1. As per 2011 census of India.

2. As defined by CPCB.

(ii) the thermal power plant declared to retire before the date as specified in column (5) of Table-I shall not be required to meet the specified norms in case such plants submit an undertaking to CPCB and CEA for exemption on ground of retirement of such plant: Provided that such plants shall be levied environment compensation at the rate of rupees 0.20 per unit electricity generated in case their operation is continued beyond the date as specified in the Undertaking; (iii) there shall be levied environment compensation on the non-retiring thermal power plant, after the date as specified in column (4) of Table-I, as per the rates specified in the Table-II, namely:- Table-II

Non-Compliant operation beyond the Timeline	Environmental Compensation (Rs. per unit electricity generated)	Category C	
Category A	Category B		
0-180 days	0.10	0.07	0.05
181-365 days	0.15	0.10	0.075
366 days and beyond	0.20	0.15	0.10.]

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]

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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]
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/m ³ (normal)
28. Chlor Alkali (Caustic soda)	Emissions	Concentrations in mg/m ³ (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/m ³ (normal)
	Particulate matter	250**
	H ₂ S	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/m ³ (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/m ³ (normal).		
30. Integrated Iron and Steel Plants:	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/m ³ (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 rewood 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 generation capacity:

- 500 MW and above 275
- 200 MW/210 MW and above to less than 500 MW 220
- Less than 200 MW /210 MW $H=14(Q)^{0.3}$ where Q is emission rate of SO₂ in kg/hr. and H Stack height in meters.

Stream generation capacity:

- Less than 2 ton/hr. 2-1/2 times the neighboring building height or 9 metres (whichever is more).
- More than 2 ton/hr. to 5 ton/hr. 12
- More than 5 ton/hr. to 10 ton/hr. 15
- More than 10 ton/hr. 18
- More than 15 ton/hr. to 20 ton/hr. 15
- More than 20 ton/hr. to 25 ton/hr. 24
- More than 25 ton/hr. to 30 ton/hr. 27
- More than 30 ton/hr. 30 or using formula $H=14(Q)^{0.3}$ (whichever is more) where Q is emission rate of SO₂ in kg/hr. and H is Stack height in metres.

Industry

33A. [Thermal Power Plants with wet Flue Gas Desulphurization (FGD) [Inserted by Notification No. G.S.R. 593 (E), dated 28.6.2018 (w.e.f. 19.11.1986).]

Parameter

Standards

Stack Height/Limit in Meters

Power generation capacity:

- 100 MW and above
 $H=6.902(QX^{0.277})^{0.555}$
or
100 m minimum
- Less than 100 MW
 $H=6.902(QX^{0.277})^{0.555}$
or
30 m whichever is more";
Q = Emission rate of SO₂ in kg/hr*
H = Physical stack height in meter

*total of the all Unit's
connected to stack

Note: These standards shall
apply to coal /lignite based
Thermal Power Plants.]

34. Small Boilers	Emissions*	
Capacity of Boiler	Particulate matter	
-Less than 2ton/hr.		1600
-2 to 15 ton/hr.		1200
-More than 15ton/hr.		150
*All emissions normalized to 12 per cent carbon dioxide.		
35. [Coffee Industry [Inserted by Notification No. G.S.R. 48(E), dated 24.01.2020.]	Instant/Dry Processing	
		Limiting value for concentration in mg/l except for pH
	pH	6.5 - 8.5
	BOD ₃ days 27°C	100 (for discharge on land for irrigation)
	Wet/Parchment Coffee Processing	
	pH	6.5 - 8.5
	BOD ₃ days. 27°C A. For storage in lined lagoons B. For discharge on land for irrigation	1000 100
Notes: (i) Raw, treated and / or diluted effluent shall not be discharged into surface water body or used for recharging ground water under any		

circumstances what so ever.(ii) The non-permeable lining system shall be constructed by using well graded, highly impervious clay or geosynthetic liners such as Geosynthetic Clay Liners (GCL), High-Density Polyethylene (HDPE) or a combination of both and shall achieve an in-situ coefficient of permeability of less than $1 \times 10^{-7} \text{ cm/sec}$. The compacted clay liner must have a minimum thickness of 300 mm (or two compacted layers of 150 mm minimum thickness each). The finished lining must be tested to ensure that it meets the permeability criteria.(iii) The effluent storage facilities/lagoons/solar evaporation ponds shall be located above high flood level mark of the nearby stream, rivulet, etc. with below mentioned free board and away from any water body/stream at a distance.

Free Board (cm)	Distance (m)
60	100

(iv) The liner system specification and lagoon specification to be

	achieved in one year.]	
36. Aluminium Plants	Emissions	
(a) Alumina Plant:		
(i) Raw Material Handling	Primary and Secondary Crusher	150
	Particulate matter	
(ii) Precipitation Area	Particulate Matter	250
-Calcinations	Carbon Monoxide	1% max.
		$H = 14$ $(Q)(0.3)$ where Q is emission rate of SO ₂ in kg/hr. and H is Stack height in metres
	Stack height	
(b) Smelter Plant		
(i) Green Anode Shop	Particulate matter	150
(ii) [Anode Bake Oven [Substituted by Notification No. G.S.R. 46(E) dated 3.2.2006 (w.e.f. 19.11.1986)]	-do-	50 mg/Nm ³
(iii) Pot room	Total Fluoride	2.8 kg/ton by 31st December 2006
	For Soderberg* Technology	
	For Pre-baked Technology	0.8 kg/ton by 31st December 2006
*Separate standards for VSS, HSS, PBSW and PBCW as given in column 4 stands abolished.]		
(c) Standards for forage fluoride -		
	-Twelve consecutive months average	40 ppm
	-Two consecutive months 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 metallled 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
unit located in a
cluster should be
less than 600
mg/Nm³. The
measurements
are to be
conducted at
least twice a
month for all the
12 months in a
year.

38. Petrochemicals (Basic intermediates)

[A. Effluents]

PH	6.5-8.5
[*BOD (3 days at 27°C)]	50
**Phenol	5
Sulphide (as S)	2
COD	250
Cyanide (as CN)	0.2
***Fluoride (as F)	15
Total suspended solids	1000
Hexavalent	0.1
Chromium (as CR+6)]	
****Total Chromium (as CR)	2.0

B. Emission from Chimney/Stack

Limiting concentration
in mg/Nm³,
unless stated

"(Furnace, Boiler, Heater, Vaporiser)

Sulphur Dioxide (SO ₂)	Gas
Liquid	1700
Oxides of Nitrogen (NO _x)	Gas
Liquid	450
Particulate Matter (PM)	Gas

Fuel Type

Existing plants

New Plant/Expansion of Existing Plant

50	50
850	
350	250
350	
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 of decoking. (iii) Norms for CO shall be monitored only in case of Phthalic Anhydride (PA), Maleic Anhydride (MA), Terephthalic Acid (PTA) and Dimethyl Terephthalate (DMT) Plants. Norms for CO emissions shall not be applicable to PA/MA manufacturing stand alone existing plants with an installed capacity of less than 30,000 metric tonnes per annum, provided that such units have a chimney/stack of minimum 30 metres height for emitting Carbon Monoxide.

Process Emission
(Specific Pollutant)

	Source	Limiting concentration in mg/Nm ³	
		Existing Plants	New Plants
Chlorine	EDC/VCM Plant and Incinerator	10	10
Hydrochloric Acid Mist	EDC/VCM Plant and Incinerator	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-isocyanate (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 ProcessEmission (General Pollutant)	PA, MA and TDIPlants	50	25
	Source	Limitingconcentration in mg/Nm ³	
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/l.****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. [Inserted by Notification No. G.S.R. 820 (E) dated 9.11.2012 (w.e.f. 19.11.1986)]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 of Volatile Products	Naphtha:(i)VOC reduction,%or(ii) Emission, gm/m ³	(i) _99.5or(ii) _ 5
Benzene andButadiene:	(i) VOC reduction,%or(ii) Emission, mg/m ³	(i) _99.99or(ii) _ 20	
Toluene/Xylene:(VOC)	reduction,%or(ii) Emission, mg/m ³	(i) _99.98or(ii) _ 150	

[[***] [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/l, except for pH		
	Inland Surface Water	On land for Irrigation	

pH	5.5-9.0	5.5-9.0
BOD ₃ days, 27°C	30	100
Total Suspended Solids	50	100
Oil Grease	10	10
Phosphate as P	1	-

(ii) Hotel with less than 20 bedrooms or a Banquet Hall with minimum floor area of 100 m² or a Restaurant with minimum seating capacity of 36

pH	5.5-9.0	5.5-9.0
BOD ₃ days, 27°C	100	100
Total Suspended Solids	100	100
Oil Grease	10	10

Notes: i. Hotels, banquet halls, restaurants, etc. located in coastal area shall also comply with the provisions of the Coastal Regulation Zone, as applicable. ii. If, the effluent is discharged into a municipal sewer leading to a Sewage Treatment Plant, the hotel or restaurant or banquet hall, as the case may be, shall provide a proper Oil and Grease Trap for effluent arising from its kitchen and laundry and shall have to comply with the 'General Standards for Discharge of Environmental Pollutants 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 as 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 C ₆ H ₅ OH)	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		Limiting concentration in mg/Nm ³
HCl	20		
Cl ₂	5		
H ₂ S	5		
P ₂ O ₅ as H ₃ PO ₄	10		
NH ₃	30		
Pesticides compounds in the form of particulate matter	20		
CH ₃ Cl	20		
HBr	5		
B.Effluent Standards			
		Limiting concentration 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 grade unit	100		
Oil and Grease	10		
Suspended Solids	100		
Bioassay Test	90 percent 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 exceed individually 5 times the drinking water standards as per Bureau of Indian Standards
Cyanide(as CN)	0.2
Nitrate(as NO ₃)	50
Phosphate(as P)	5.0
Phenol and Phenolic Compounds as C ₆ H ₅ OH	1.0
Sulphur	0.03
Benzene Hexachloride (BHC)	0.01
Carbonyl	0.01
Copper Oxichloride	9.6
DDT	0.01
Dimethoate	0.45
24D	0.4
Endosulfan	0.01
Fenitrothion	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
Other Pesticide (individually)	0.10

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

recipient water body in down stream, in which effluent shall be disposed off. 2. No limit for chemical Oxygen Demand (COD) is prescribed but, COD in the treated effluent shall be monitored. If COD is persistently reported more than 250 mg/l, the industrial units discharging such an effluent shall be required to identify chemical causing the same. In case, these are found to be toxic, as defined in Schedule I of the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, the concerned State Pollution Control Board/Pollution Control Committee in such cases shall direct the industries to install tertiary treatment system by 31st March, 2012. 3. Parameters listed as "Additional parameters" shall be prescribed depending upon the process and product, on a case basis.

C. Emission Standards for Incinerator

	Limiting concentration in mg/Nm ³ , unless stated	Sampling Duration in minutes, unless stated 30 or more (for sampling of 300 litres of emission)	
Particulate Matter	50		
HCl	50	30	
SO ₂	200	30	
CO	100	Daily average	
Total organic Carbon	20	30	
Total Dioxins and Furans*	Existing Incinerator	0.2 ng TEQ/Nm ³	8 hours
	New Incinerator	0.1 ng TEQ/Nm ³	8 hours
Sb+As+Pb+Cr+Co+Cu+Mn+Ni+V and their compounds	1.5	2 hours	

*The existing plant shall comply with norms for Dioxins and Furans as 0.1 ng TEQ/Nm³ by 18th August, 2013. Note : i. All monitored values shall be corrected to 11% oxygen on dry basis. ii. The CO₂ concentration in tail gas shall not be

less than 7%. iii. In case, halogenated organic waste is less than 1% by weight in input waste, all the facilities in single chamber incinerators shall be designed so as to achieve a minimum temperature of 1100°C in the incinerator. For fluidized bed technology based incinerator, temperature shall be maintained at 950°C. iv. In case, halogenated organic waste is less than 1% by weight in input waste, waste shall be incinerated only in twin chamber incinerators and all the facilities shall be designed to achieve a minimum temperature of $850 \pm 25^\circ\text{C}$ in primary chamber and 1100°C in secondary combustion chamber with a gas residence time in secondary combustion chamber not less than two seconds. v. Scrubber meant for scrubbing emissions shall not be used as quencher. vi. Incineration plants shall 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. In case of non-conformity, ash and residue as the case may be, shall be re-incinerated. vii. The incinerator shall have a chimney of at least thirty metres height.

D. Effluent from Incinerator

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

E. Stormwater

Note: (i) Stormwater shall not be allowed to mix with scrubber water and/or floor washings. (ii) Stormwater shall be channelized through separate drains passing through a HDPE lined pit having holding capacity 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

	Shall not exceed 5°C above the receiving water temperature
1. 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 metal like	Shall not exceed 5
Nickel, etc.	Times the drinking water standards of BIS

(2) State Board may prescribe 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 ₆ H ₅ OH	1.0
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(d) Inorganics :

Arsenics (as As)	0.2
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Cyanide (as CN)	0.2
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Nitrate (as NO ₃)	50.0
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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/NM₃

HCL	20
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Cl ₂	5
-----------------	---

H ₂ S	5
------------------	---

P ₂ O ₅ (as H ₃ PO ₄)	10
--	----

NH ₃	30
-----------------	----

Particulate matter with pesticides compounds	20
--	----

CH ₃ Cl	20
--------------------	----

HBr	5]
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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 prescribe 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) Effluents

Disposal: Channel/Conduit

Carrying waste-waters to Secondary treatment plants

Type of Tanneries

-Chrome tanneries/combined chrome and vegetable tanneries

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:

S.No.	Industry	Parameter	Standards
(1)	(2)	(3)	(4)
[42 [Substituted by Notification No. 1241(E), dated 28.12.2018 (w.e.f. 19.11.1986).]	Paint Industry	A- Emission Standards	
	Concentration not to exceed		
Particulate Matter (all process vents attached to pre-mixers and mixers)	50 mg/Nm ³		

Note:-(i) All dustgenerating equipment or processes shall be provided with dustextraction arrangement.(ii) The bag houses,etc. shall be connected to chimneys or stacks of at least twelvemetres height or at least two metres above the top most point ofthe building, shed or plant in the industry, which so ever ishhigher.(iii) The unit shall channelise shop floor orfugitive emissions through a stack of twelve metres height or atleast two metres above the top most point of the building or shedor plant in the industry, which so ever is higher.

B. Effluent Standards

(i) Large scale waterbased plants shall meet zero liquid discharge from processection.(ii) All Micro, Small and Medium units as perMicro, Small and Medium Enterprises Development Act, 2006 (27 of2006) and Solvent based large scale paint units shall meet thestandards given as:

Parameter	Concentration not to exceed, (in mg/l except forpH and Bioassay)		
pH	6.5 – 8.5		
Total Suspended solid (TSS)	100		
Bio-Chemical Oxygen Demand (BOD) (3 days at27oC)	30		
S. No.	Industry	Parameter	Standards
(1)	(2)	(3)	(4)
		Phenolics as C6H5OH	1.0
Oil and Grease	10		
Bio-Assay Test	90% survival in 100% effluent in 96 hours		
		Heavy Metals*	
Lead as Pb	0.1		
Chromium (Hexavalent)	0.1		
Total Chromium	2.0		
Copper as Cu	2.0		
Nickel as Ni	2.0		

Zinc as Zn	5.0
Arsenic as As**	0.2
Cobalt as Co	0.2
Total Heavy metals	7.0

C- Service Wastewater

All efforts shall be made by the industry for 'zero discharge' of service wastewater, and in case, the industry prefers to discharge service wastewater, the following norms shall be complied with:-

	Concentration not to exceed, (in mg/l except for pH and temperature)
pH	6.5 – 8.5
Suspended Solids	100
Oil and Grease	10
Temperature	Not more than 5°C higher than the intake water temperature

D- Storm-Water

(i) Storm water for a plant, a unit (having plot size at least 250 square metres) shall not be allowed to mix with scrubber water, effluent and/or floor washings. (ii) Storm water within the battery limits of a unit shall be channelized through separate drain or pipe passing through a High Density Poly ethylene (HDPE) lined pit having holding capacity of 10 minutes (hourly average) of rainfall.

E- Guidelines for Solvent Losses

(i) the total losses of solvent should not be more than 5% of the solvent consumed, if solvent consumption less than 1000 tons/Annum; and (ii) the solvent loss should not be more than 3% of the solvent consumed, if solvent consumption greater than 1000 tons/Annum.

* The units shall meet the prescribed limits of heavy metals in treated effluent, however, in cases where heavy metal concentration in intake water is more than prescribed limits, State Pollution Control Boards or Pollution Control Committees may specify higher limits

of heavy metals provided the maximum limits are restricted to the background limits of intake water.** In case As is geogenic in ground water, the State Pollution Control Boards/Pollution Control Committees may relax the limit with respect to it appropriately, provided the built of As in waste water does not exceed 0.2 mg/l over and above the As in raw water and limit with respect to total heavy metals is maintained.]

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
Free Cl ₂ as 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)]
	[* * *] [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)]
	[* * *] [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)]
	[* * *] [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)]
	[* * *] [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)]
	[* * *] [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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	[* * *] [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)]

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)]	Glass Industry	Emissions	
A.	Sodalime Borosilicate and other special Glass (other than Lead)		
(a) Furnace:			
Capacity			
(i) Upto a product draw capacity of 60 MT/Day	Particulate matter	2.0 kg/hr.	
(ii) Product draw capacity more than 60 MT/Day	Particulate matter	0.8 kg./Mt. of product drawn	
(iii) For all capacities emission and H is stack height in metres.	Stack height	$H = 14(Q)^{0.3}$ where Q is the rate of SO ₂ in Kg/hr.	
	Total fluorides	5.0 mg/NM ₃	
	NOX	Use of low nox burners in new plants.	
(b) Implementation of the following measures for fugitive emission control from other sections :-			
(i) Raw materials should be transported in leak proof containers.			
(ii) Cullet preparation should be dust-free using water spraying.			
(iii) Batch preparation section should be covered.			

B.

Lead Glass

(a) Furnace:

All capacities

Particulate matter	50 mg/NM ³
Lead	20 mg/NM ³

(b) Implementation of the following measures for fugitive emission control from other sections :-

(i) Batch mixing, proportioning section and transfer points should be covered and it should be connected to control equipments to meet the following standards:

Particulate matter	50 mg/NM ³
Lead	20 mg/NM ³

(ii) Minimum stack height should be 30 metres in lead glass units.

(c) Pot Furnace at Firozabad

Furnace :

Particulate matter	1200 mg/NM ³
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Note :- Depending upon local environmental conditions, State/ Central Pollution Control Board can prescribe particulate matter more stringent standards than those prescribed above.

C.

Glass Industry (For all categories)

Effluents

pH	6.5-8.5
Total suspended solids	100 mg/l
Oil Grease	10 mg/l

49

Capacity:-

Lime Kiln	Stack height
Stack height	

Upto 5T/day

A Hood should be provided with a stack of 30 meter height from ground level (including kiln height).

Above 5T/day

Stack height

$H = 14 (Q)^{0.3}$ Where Q is emission rate of

		SO ₂ in kg/hr. and H is Stack Height in meters.	
More than 5T/day And upto 40T/day	Particulate matter	500 mg/NM ³	
Above 40T/day	Particulate matter	150 mg/NM ³	
[50 [Substituted by Notification No. G.S.R. 1016(E), dated 28.10.2016 (w.e.f. 19.11.1986).]	A. Slaughterhouses or Meat Processing Units or Both*	Effluents	Maximum Concentration values are in mg/l except for pH
pH	6.5 to 8.5		
Bio-chemical Oxygen Demand (BOD) [3 days at 27°C]	30		
Chemical Oxygen Demand (COD)	250		
Suspended Solids	50		
Oil and Grease	10		
B. Sea Food Industry*	Bio-chemical Oxygen Demand (BOD) [3 days at 27°C]	30	
Suspended Solids	50		
Oil and Grease	10		

*The emission standards from Boiler House of Slaughterhouses or Meat Processing Units or both and Sea Food Industry shall conform to the standards prescribed vide notification No. G.S.R. 742 (E), dated 30.08.1990 as amended from time to time under the Environment (Protection) Act, 1986. Note: (i) For Slaughterhouses operating in local bodies/ municipalities, where the treated effluent is discharged into municipal sewers leading to full-fledged Sewage Treatment Plant, the BOD may be relaxed to 100 mg/l. (ii) All Slaughterhouses/ meat processing units shall ensure safe and proper disposal of solid waste {Type I (Vegetable matter such as rumen, stomach and intestinal contents, dung, agricultur residues 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 unit. (iii) The industries 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/l except 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.	Fruit Vegetables			
	(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	25
	[BOD (3 days at 27°C)]	200	
(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	35
	[BOD (3 days at 27°C)]		
	[Substituted by G.S.R. 176(E), dated 2-4-1996 (w.e.f. 3-4-1996).]	300	
(ii) Below 10T/Day		Disposal via septic tank	
D.	Confectioneries		
(a) 4 T/Day and above	Effluents		
	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 ascertain 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 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
52.	*Jute Processing Industry:	Effluents	Concentration in mg/l except 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/l except 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 1st day 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:

Category :

	Effluents	
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 (Concentration in

quality for CETP)	mg/1)
pH	5.5-9.0
Temperature °C	45
Oil Grease	20
Phenolic Compounds (as C ₆ H ₅ OH)	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 (a)	On land for Irrigation (b)	Into Marine Coastal areas (c)
		Concentration in mg/l except pH and Temperature		
B. Treated Effluent Quality of common effluent treatment plant	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	-

Cyanide (as CN)	0.2	0.2	0.2
Chloride (as Cl)	1000	600	-
Fluoride (as F)	2.0	-	15
Sulphate (as So ₄)	1000	1000	-
Sulphide (as S)	2.8	-	5.0
Pesticides	Absent	Absent	Absent
Phenolic compounds C ₆ H ₅ OH	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/l, 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	-	3m ³ /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.

Sl. No.	Industry	Parameters (in mg/l, except for pH)	Inland Surface Waters	Public Sewers	Land for Irrigation	Marine Coastal areas
[57 [Substituted by Notification No. G.S.R. 657(E), dated 10.9.2021 (w.e.f. 19.11.1986).]	Tanneries	Suspended Solids	100	00	200	100
BOD 3 days at 27°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	200	-		
Hexavalent Chromium (Cr+6)	0.1	0.2	0.1	1.0		
Total Chromium (as Cr)	2.0	2.0	2.0	2.0		
Sulphides (as S)	2.0	5.0	-	5.0		
Sodium Percent	-	60	60	-		
Boron (as B)	2.0	2.0	2.0	-		
Oil Grease	10	20	10	20]		
[***]						
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]		

[illegible]

<p>18.3.2011]</p> <p>[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]</p>	<p>[***] [Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]</p>	<p>221 (E) dated 18.3.2011]</p> <p>[Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]</p>	<p>221 (E) dated 18.3.2011]</p> <p>[Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]</p>	<p>221 (E) dated 18.3.2011]</p> <p>[Deleted by Notification No. G.S.R. 221 (E) dated 18.3.2011]</p>
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<p>59. [Agriculture residue fired Boilers (including bagasse)]</p> <p>[Substituted by Notification No. G.S.R. 647 (E) dated 13.9.2002 (w.e.f. 19.11.1986)]</p>	<p>Emissions</p>	<p>(Concentration in mg/1)</p>		
<p>(a) Step grate</p> <p>(b) Horse shoe/pulsating grate</p> <p>(c) Spreader stoker</p>	<p>Particulate matter</p> <p>Particulate matter</p> <p>Particulate matter</p>	<p>250</p> <p>500(12% CO₂)</p> <p>800(12% CO₂)</p>		
<p>Note.- In the case of horse shoe and</p>				

spreader stoker
boilers, if more than
one boiler is attached
to a single stack, the
Standard shall be
fixed based on added
capacity of all the
boilers connected
with the stack.

[* [Omitted 'serial no.
60' by Notification
No. G.S.R. 1095(E),
dated 9.11.2018.]

	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/Nm ³)
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 of Paris manufacture	Particulate matter	*
Capacity	Stack height	

		A. Hood should be provided with a stack of 30 metre height from ground level (including kiln height)
Upto 5T/day	-do-	

		$H = 1.4(Q)^{0.3}$ Where Q is emission rate of SO ₂ in/kg/hr and H is Stack height in metres
Above 5T/day	-do-	

More than 5T/day and upto 40T/day	Particulate matter	500 mg/Nm ³
	-do-	150 mg/Nm ³

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 $H = 14 (Q_g)^{0.3}$ (whichever is more)

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

[* [Omitted 'serial no. 62' by Notification No. *
G.S.R. 1095(E), dated 9.11.2018.] *]

63. [Starch Industry (Maize products)]		Concentration not to exceed mg/l
[Inserted by G.S.R. 176(E), dated 2-4-1996	Effluents	(except pH and waste-water discharge)
(w.e.f. 3-4-1996).]		
	pH	6.5-8.5
	BOD	100
	(3 days at 27°C)	
	Suspended solids	150
	Waste-water discharge	8 m ³ /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 mentioned 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/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 sewer such 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.(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/Nm ³
(i) New unit	Particulate matter (corrected to 6%CO ₂)	
	Hydrocarbons	25 ppm
(ii) Existing units	Particulate matter (corrected to 6%CO ₂)	350 mg/Nm ³

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%CO ₂)	350 mg/Nm ³
(b) Units having capacity 10 tonnes or more.	Particulate matter (corrected to 6%CO ₂)	150 mg/Nm ³

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% CO ₂)	350mg/Nm ³
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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
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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 applicable 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/l, 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 C ₆ H ₅ OH)	5.0
Sulphide	2.0

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

Note:(i) Industries covered under this group include halo aliphatics, plasticizers, aromatics (alcohols, phenols, esters, acids and salts, aldehydes and ketones), 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 be monitored. If the COD in treated effluent exceeds 250 mg/l, the concerned industrial units discharging such effluent shall be required to identify chemicals responsible for high COD in effluent shall be required to identify chemicals responsible for high COD in effluent. In case, these are found to be toxic as defined under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, the concerned industry shall install tertiary treatment system. (iii) The above mentioned standards shall not be applicable to small scale detergent formulating units.

B. Emission Standards for Incinerator

Limiting concentration in mg/Nm ³ , unless otherwise stated	Sampling Duration in minutes unless otherwise stated	
Particulate Matter	50	30 or more (for sampling about 300 litres of emission)
HCl	50	30
SO ₂	200	30
CO	100	daily average
Total Organic Carbon	20	30
Total Dioxins Existing and Furans* Incinerator-	0.2 ng TEQ/Nm ³	8 hours
New Incinerator	0.1 ng TEQ/Nm ³	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 for Dioxins and Furans as 0.1 ng TEQ/Nm³ by 1st January, 2014.

Note: (i) All monitored values shall be corrected to 11% oxygen on dry basis. (ii) The CO₂ concentration in tail gas shall not be less than 7%. (iii) In case, halogenated organic waste is less than 1% by weight in input waste all the facilities in twin chamber incinerator shall be designated so as to achieve a minimum temperature of 850±25° in primary chamber and 950°C in secondary combustion chamber and with a gas residence time in secondary combustion chamber not less than two or all the facilities in single chamber incinerator for gaseous hazardous waste shall be designated so as to achieve a minimum temperature of 950° in the combustion chamber with a gas residence time not less than two seconds. (iv) In case halogenated organic waste is more than 1% by

weight input waste, waste shall be incinerated only in twin chamber incinerators and all the facilities shall be designated to achieve a minimum temperature of $850 \pm 25^\circ \text{C}$ in primary chamber and 1100°C in secondary combustion chamber with a gas residence time in secondary combustion chamber not less than two seconds. (v) Scrubber meant for scrubbing emissions shall not be used as quencher. (vi) incineration plants shall be operated (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 their weight. In case of non-conformity, ash and residue, as the case may be shall be re-incinerated. (vii) The incinerator shall have a chimney of at least thirty meters height.

C. Effluent Standards for Incinerator

Note: (i) Effluent from scrubber (s) and floor washing shall flow through closed conduit or pipe network and be treated to comply with the effluent standards mentioned at 'A' above. (ii) The built up in Total Dissolved Solids (TDS) in waste water of floor washings shall not exceed 1000 mg/l over and above the TDS of raw water used.

D. Storm water

Note: (i) Storm water shall not be allowed to mix with scrubber water and/or floor washings. (ii) Storm water shall be channelized through separate drains passing through a HDPE lined pit having holding capacity of 10 minutes (hourly average) 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/l)
Nitrate (as N)	10
Arsenic	0.2
Hexavalent Chromium	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
Phenolics as C ₆ H ₅ OH	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.	Grain Processing, Flour Mills, Paddy Processing, Pulse Making or Grinding Mills	A-Emission Standards	

	Capacity(tonne per hour)	LimitingConcentration in mg/Nm ³
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/NM ³
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 CO₂ 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=SO₂ emission rate in kg/hr.In no cse the stack height shall be less than 11 metres.Where providing all stacks are not feasible using above formula the limit of 400 mg/Nm³ for Q=SO₂ 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 27oC)	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 C ₆ H ₅ OH	1.0
(c) Inorganics	
Arsenic as AS	0.2
Cyanide as CN	0.2
Nitrate as NO ₃	50
Phosphate as P	5.0
(d) Specific pesticide	(microgram/litre)
Benzene	10
Hexachloride	
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 :

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

(ii) Fungicides:

Aureofungin	Organomercurials (MEMC PMA)
Barium Polysulphide	Sulphur (Colloidal, Wettable Dust)
Cuprous Oxide	Streptocycline
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 or 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/l
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

2.0 Off-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:

1.0 DG Sets .1.1 DG Sets at drill site as well as production station shall conform with the norm notified under the Environment (Protection) Act, 1986.

2.0 Elevated/ground flares.

2.1 Cold Venting of gases shall never be resorted to and all the gaseous emissions are to be flared.

2.2 All 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.

2.3 In 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.

2.4 A green belt of 100m width may be developed around the flare after the refractory wall in case of ground flaring.

2.5 If 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.

2.6 In 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.

3.0 Burning 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 content 1% 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 LC₅₀ 30,000 mg/l 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 Hg 1 mg/kg and Cd 3 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 annulars, 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 content 1%. (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/l 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/l 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 be 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.

S.No.	Industry	Parameters	Standard
1	2	3	4
73. [[Substituted by Notification No. G.S.R. 541(E), dated 6.8.2021 (w.e.f. 19.11.1986).]	Bulk Drug and Formulation (Pharmaceutical)	A. EFFLUENT STANDARDS*	
	Limiting value for concentration (in mg/l except for pH and Bio assay)		
(i) Compulsory Parameters			
pH	6.0 -8.5		
BOD (3 days 27°C)	30		
COD	250		
TSS	100		
Oil Grease	10		
Ammonical Nitrogen	100		
Bio - Assay Test**	90% Survival of Fish after first 96 hours in 100% effluent		

(ii) Additional Parameters##

***Benzene	0.1
***Xylene	0.12
***Methylene Chloride	0.9
***Chlorobenzene	0.2
Phosphates as P	5
Sulphides as S	2
Phenolic Compounds	1
Zinc	5
Copper	3
Total Chromium	2
Hexavalent Chromium (Cr6+)	0.1
Cyanide (as HCN)	0.1
Arsenic	0.2
Mercury	0.01
Lead	0.1
	Less than 26
SAR	(applicable only for discharge onland)

(iii) Industry connected with CETP

The discharge norms for industry connectedwith CETP and of CETP shall be governed by Ministry ofEnvironment, Forest Climate Change notification S.O. 4(E), dated the 1st January, 2016.

State Pollution Control Board shallprescribe additional relevant parameters as given at para A (ii)of this notification as per needs and discharge potential ofmember industries and specify the frequency of monitoringconsidering the receiving environment conditions.

Note:

The standards in para A is applicable to alldischarges except

to CETP.

*Not applicable to industry discharging to CETP, and shall be applicable to all discharge to land and surface water bodies including use of treated wastewater for horticulture or irrigation purpose.

** The Bio assay test shall be conducted as per IS : 6582-1971

Parameters listed as "Additional Parameters" shall be prescribed by SPCB depending on the process and product and its monitoring frequency shall be monthly/quarterly as decided by SPCBs

*** Limits shall be applicable to industries those are using Benzene, Xylene, Methylene Chloride, Chlorobenzene.

B. EMISSION STANDARDS

(Tank farm Vents)

Parameter	Limiting value for concentration (mg/Nm ³)
Chlorine	15
Hydrochloric acid vapor	35
Ammonia	30
Benzene	5
Toluene	100
Acetonitrile	1000
Dichloromethane	200
Xylene	100
Acetone	2000

C. The total cumulative losses of solvents should not be more than 5% of the solvent on annual basis from storage inventory

D. Chemical and Biological sludge or any residue, reject, concentrate generated from wastewater

treatment or its management facility at Industry or CETP catering to industries engaged in manufacturing of bulk drug or formulation of Pharmaceuticals, shall be classified as Hazardous Waste as per the provision of clause 17 of sub-rule (i) of rule 3 of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and shall be subject to the provision made therein.]

[74 [Substituted by Notification No. G.S.R. 143(E), dated 22.02.2022 (w.e.f. 19.11.1986).]

Minimum stack height (Vertical Shaft Brick Kilns)- Kiln capacity less than 30,000 bricks per day- Kiln capacity equal or more than 30,000 bricks per day

Brick Kilns

14 m (at least 7.5m from loading platform) 16 m (at least 8.5m from loading platform)

Particulate matter in stack emission

250 mg/Nm³

Minimum stack height (Other than Vertical Shaft Brick Kilns)- Kiln capacity less than 30,000 bricks per day- Kiln capacity equal or more than 30,000 bricks per day

24 m 27 m

Notes : 1. All new brick kilns shall be allowed only with zig-zag technology or vertical shaft or use of Piped Natural Gas as fuel in brick making and shall comply to these standards as stipulated in this notification.

2. The existing brick kilns which are not following zig-zag technology or vertical shaft or use Piped Natural Gas as fuel in brick making shall be converted to zig-zag technology or vertical shaft or use Piped Natural Gas as fuel in brick making within a period of (a) one year in case of kilns located within ten kilometre radius of non-attainment cities as defined by Central Pollution Control Board (b) two years for other areas. Further, in cases where Central Pollution Control Board/State Pollution Control Boards/Pollution Control Committees has separately laid down timelines for conversion, such orders shall prevail.

3. All brick kilns shall use only approved fuel such as Piped Natural Gas, coal, fire wood and/or agricultural residues. Use of pet coke, tyres, plastic, hazardous waste shall not be allowed in brick kilns.

4. Brick kilns shall construct permanent facility (port hole and platform) as per the norms or design laid down by the Central Pollution Control Board for monitoring of emissions.

5. Particulate Matter (PM) results shall be normalized at 4% CO₂ as below:

PM (normalized) = (PM (measured) x 4%) / (% of CO₂ measured in stack), no normalization in case CO₂ measured \geq 4%. Stack height (in metre) shall also be calculated by formula $H=14Q^{0.3}$ (where Q is SO₂ emission rate in kg/hr), and the maximum of two shall apply.

6. Brick kilns should be established at a minimum distance of 0.8 kilometre from habitation and fruit orchards. State Pollution Control Boards/Pollution Control Committees may make siting criteria stringent considering proximity to habitation, population density, water bodies, sensitive receptors, etc.

7. Brick kilns should be established at a minimum distance of one kilometre from an existing brick kiln to avoid clustering of kilns in an area.

8. Brick kilns shall follow process emission/fugitive dust emission control guidelines as prescribed by concerned State Pollution Control Boards/Pollution Control Committees.

9. The ash generated in the brick kilns shall be fully utilized in-house in brick making.

10. All necessary approvals from the concerned authorities including mining department of the concerned State or Union Territory shall be obtained for extracting the soil to be used for brick making in the brick kiln.

11. The brick kiln owners shall ensure that the road utilized for transporting raw materials or bricks are paved roads.

12. Vehicles shall be covered during transportation of raw material/bricks].

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

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

	Limiting Concentration in mg/l except for pH, Temperature and Bio-assay			
	Creek	Marine Coastal Zone	Estuary Area	Inland Surface Water
Suspended Solids	500*	1000*	200	100
Ammonical Nitrogen as 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			
Temperature	Not to exceed 5°C above the ambient temperature of the receiving water body			

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

**The diffuser system shall be located in conformity with the Coastal Regulation Zone Notification, 2011 at a minimum depth of 5 metres below low tide 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
for its
catchment
area

76. Emission Standard for SO₂ from Cupola furnace:

Standard for Sulphur Dioxide emission from Cupola Furnace :

Characteristics	Emission limit
Sulphurdioxide (SO ₂) emission	300 mg/Nm ³ at 12% CO ₂ corrections

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 SO₂ 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/m ³ , Max	50	ASTM 873 : 8
(vi).	Gum (Solvent Washed)g/m ³ Max	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 unleaded 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 :

Sl. No.	Characteristics	Requirement	Method of Test Ref. to P : or IS : 1448
(i)	Density at 15°C, Kg/m ³	820 to 880 (1)	P : 32
(ii)	Cetane Number, Min	45°0(2)	P : 9
(iii)	Distillation 85 percent by volume recovery at °C Max 95 per cent by volume recovery at °C Max	350 370	P : 18
(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	Existing Batteries
			New Batteries (at Green Field Site)	Existing Batteries
79. [] [Substituted Coke oven by G.S.R. 46(E), dated 3-2-2006 (w.e.f. 3-2-2006).]	plants (by product recovery type)	Fugitive Visible Emissions		
		(a) Leakage from door	5 (PLD)*	10 (PLD)*
		(b) Leakage from charging lids	1 (PLL)*	1 (PLL)*
		(c) Leakage from AP Covers	4 (PLO)*	4 (PLO)*
		(d) Charging emission (second/charge)	16 (with HPLA)*	50 (with HPLA)*
		Stack Emission of Coke Oven		75
		(a) SO ₂ (mg/Nm ³)	800	800
		(b) Nox(mg/Nm ³)	500	500
		(c) SPM (mg/Nm ³)	50	50
		(d) SPM emission during-charging-for stamp	25	25

charging batteries (stack
emission (mg/Nm³))

(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/Nm ³)	800	-	-
Emission for quenching operation			
(a) Battery area (top of the battery)	5	5	5
(b) Other units in coke oven plant	2	2	2
(c) Ambient air standards (mg/Nm ³)	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 600 kg/cm²; (c) the charging should be accomplished with hermetically sealed charging sleeves and screw feeder in charging car. The charging car. The charging 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-345-93 specification 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 Standards.]

Source	Pollutant	Standards Concentration based (mg/Nm ³)
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/l
Lead	0.1 mg/l

(ii) Dry Cell Manufacturing Industry: Emission Standards

Pollutant	Standards Concentration-based (mg/Nm ³)
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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
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pH	6.5-8.5
----	---------

Total suspended solids	100mg/l
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Manganese as Mn	2mg/l
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Mercury as Hg	0.02mg/l
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Zinc as Zn	5 mg/l
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(iii)Secondary Lead Smelters :

Pollutant	Concentration Based standards
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Lead as Pb	10 mg/Nmp3
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Particulate matter	50 mg/Nm3
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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 $H=14Q^{0.3}$, 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/l except for pH and temperature)
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2	3
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pH	6.5-8.5
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Temperature	As applicable for other thermal power plants.
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Free available chlorine	0.5
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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 aquatic flora and fauna.

85. Environmental Standards for Coal Washeries :-

1. Fugitive emission standards.

-The difference in the value of suspended particulate matter, delta (Δ), 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 m³ 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 nozzle 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 the 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 1.5

TABLE 1.1 PRIMARY 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 aquatic 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 aquatic lives.
3.	Colour and 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	Settleable inert matters not in such concentration that would impair any usages specially assigned to this class.
6.	Oil and Grease(including	0.1 mg/1	Concentration should not exceed 0.1 mg/1 as because it has effect on fish eggs

Petroleum
Products)

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 :

Mercury (as Hg)	0.001 mg/l	(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/l	(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 1.2 PRIMARY 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 for propagating aquatic lives.
2.	Dissolved Oxygen	4.0 mg/l or 50 percent saturation value whichever is higher.	Not less than 3.5mg/l at any time for protection of aquatic lives.
3.	Colour and Odour	No noticeable colour or offensive odour.	Specially caused by chemical compound like creosols, phenols, naphtha, 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 (Nephelometric 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 3 consecutive samples in monsoon months.
7.	Biochemical Oxygen Demand	3 mg/l	Restricted for bathing (aesthetic quality of water). Also prescribed by IS : 2296-1974.

(BOD) (3days at
27°C)

TABLE 1.3 PRIMARY 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 conducive 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.	Colour and 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 1.4 PRIMARY 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.	Colour and 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 1.5 PRIMARY 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.	Colour and 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

[***] [Omitted 'serial no. 87' by Notification No. G.S.R. 1095(E), dated 9.11.2018.][Inserted by G.S.R. 7, dated 22.12.1998 (w.e.f. 2.1.1999)]

87. Emission Regulations for Rayon Industry:-(a)
Existing Plants Estimation of Uncontrolled emission quantity (EQ) of CS₂ For VSFEQ=125 Kg of CS₂/t of fibre
For VFY, EQ=225 Kg of CS₂/t of fibre{

Stack Height (H) requirement, m	Remarks
$11Q \cdot 0.41 - 3 \cdot V_s D / u$	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 - CS ₂ emission rate, kg/hr V _s - 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 install 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 = 100 µg/m³ and H₂S = 150 µg/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 quality norms for CS₂ and H₂S indicated in (b) above. The new plants or expansion projects shall provide adequate space for undertaking retrofittings. (Note: (a) and (b) above also apply to new plants/expansion projects).] }

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+NO _x (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 (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); (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:-

Noise Limits

Sound Power Level L_{wa} 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 Laboratory, Visakhapatnam (Andhra Pradesh).

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 product 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 (NO_x) 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 unloading, 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/m ³	- High Volume Sampling (Average flow rate notless

than 1.1
m³/minute)

New Coal Mines (Coal Mines commenced operation after the date of publication of this notification)	20 hours**	500 µg/m ³	
Respirable Particulate Matter (size less than 10 µm) (RPM)	Annual Average*	180 µg/m ³	Respirable Particulate Matter sampling and analysis
24 hours*	250 µg/m ³		
Sulphur Dioxide (SO ₂)	Annual Average*	80 µg/m ³	1. Improved west and Gaeke method
24 hours**	120 µg/m ³	2. Ultraviolet fluorescene	
Oxide of Nitrogen as NO ₂	Annual Average*	80 µg/m ³	1. Jacob and Hochheiser Modified (Na-Arsenic) Method
24 hours**	120 µg/m ³	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/m ³	- High Volume Sampling (Average flow rate not less than 1.1 m ³ /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, Bistrampur), Singrauli, Ib Valley, Talcher, Godavari-Valley and any

other

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/l
Total Suspended Solids (TSS)	- 100 mg/l
	200 mg/l (Land for irrigation)
OilGrease(OG)	- 10mg/l

(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)
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(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/l), 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
Sulphide as S	2
Phenolic compounds as C ₆ H ₅ OH	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/l and COD to 400 mg/l.

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 along with the rationale in Table 1.

TABLE 1 PRIMARY WATER QUALITY CRITERIA FOR BATHING WATER (Water used for organised outdoor bathing)

CRITERIA	RATIONALE
1. Fecal Coliform MPN/100 ml:	500 (desirable) 2500 (Maximum permissible) 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:	Between 6.5-8.5

4. Dissolved
Oxygen: 5 mg/1 or more

The range provides protection to the skin and delicate organs like eyes, nose, ears, etc., which are directly exposed during outdoor bathing.

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 3 mg/1 or less
day,27°C:

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:-

2.1 Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end. 2.2 The 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. 2.3 The DG set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A). 2.4 These limits shall be regulated by the State Pollution Control Boards and the State Pollution Control Committees. 2.5 Guidelines 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 siting 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 dispensation 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 gensets.

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 gensets, 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) dated 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	Emission Limits (g/k W-hr)	Smoke Limit (light absorption coefficient, M-1)	
NO _x +HC	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

Note:

1. The abbreviations used in the Table shall mean as under: NO_x - 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 categories '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] [Inserted by G.S.R. 640(E), dated 16.10.2006 (w.e.f. 16.10.2006)].

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 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 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 Level	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 + NMHC or 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 $0.3 \times \text{THC}$ in case of NG and RHC as $0.5 \times \text{THC}$ 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.]

TABLE

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

				Between 1-7-2003 and 1-7-2005	On or after 1-7-2005
NOx(as NO2) (at 15% O2), 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% O2), 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/Nm3	Both A and B	150			
Sulphur content in fuel	A	2%			
	B	4%			
Fuel specification	For A only	Upto 5 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) $14 Q^{0.3}$, Q=Total SO2 emission 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 (10 ⁶) Watt	FO	Furnace Oil
NO _x	Oxides of Nitrogen	HSD	High Speed Diesel
NO ₂	Nitrogen Dioxide	LDO	Light Diesel Oil
O ₂	Oxygen	LSHS	LowSulphurHeavy Stock
NMHC	Non-Methane Hydrocarbon	kPa	Kilo Pascal
C	Carbon	mm	Milli(10 ⁻³) metre
PM	Particulate Matter	kg/hr	Kilo (10 ³) gram per hour
CO	Carbon Monoxide	mg/Nm ³	Milli(10 ⁻³) gram per normal metre cubic
SO ₂ ppmv	SulphurDioxide part per million (10 ⁶) 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.	SO ₂	Barium Perchlorate-Thorin indicator method	
3.	NO _x	Chemiluminescence, Non-Dispersive Infra Red, Non-Dispersive Ultraviolet (for continuous measurement), Phenol disulphonic method	
4.	CO	Non-Dispersive Infra Red	
5.	O ₂	Paramagnetic, Electrochemical sensor	
6.	NMHC	Gas Chromatograph-Flame Ionisation 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/Nm ³
		Horse Shoe/Pulsating Particulate matter	500mg/Nm ³ (12%of CO ₂)
		Spreader stroker Particulate matter	500mg/Nm ³ (12%of CO ₂);

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 level Measures 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 Iron Plant (Rotary Kiln)	A. Emission Standards*	
	Particulate matter	Fuel Type	Limiting value for concentration
		coal	100 mg/Nm ³
		gas	50 mg/Nm ³
	Carbon Monoxide (Vol./Vol.)	coal/gas	1%
	Stack Height** (minimum)	coal/gas	30.0m
	Note.-*Emissions shall be normalised at 12% CO ₂ in stack emission.		
	**Stack height shall be calculated as $H = 14.0 Q^{0.3}$ where Q is emission of Sulphur Dioxide (SO ₂) in kg. /hr. i.e.		
	SO ₂ (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-dusting unit)	Particulate matter	Existing unit
		mg/Nm ³	100
			New unit
			50
	Note. -(i) Stack attached to de-dusting unit shall have minimum height of		

30.0 metre.

(ii) If, De-dusting unit is connected to After Burner Chamber (ABC), emission shall be emitted through common stack (minimum height 30.0 metre) having separate arrangements for emission monitoring for de-dusting unit.

Rotary Kiln/De-dusting unit	Particulate matter ($\mu\text{g}/\text{m}^3$)	B. Fugitive Emission Standards	
		Existing unit	New unit
		3000	2000
	Note.-(i) The existing industry shall comply with a standard of 2000($\mu\text{g}/\text{m}^3$) after one year from the date of notification.		
	(ii) Fugitive emission shall be monitored at a distance 10.0 metre from the source of fugitive emission as per following:		
	Area	Monitoring location	
	Raw material handling area	Wagon tippler, Screen area, Transfer points, Stock bin area	
	Crusher area	Crushing plant, Vibrating screen, Transfer points	
	Raw material feed area	Feeder area, Mixing area, Transfer points	
	Cooler discharge area	Oversized discharge area, Transfer points, Intermediate stock bin area, Screening	

		plant, Magnetic separation unit, Transfer points, Oversize discharge area, Product separation area, Bagging area	
		Intermediate stock bin area, Screening plant, Magnetic separation unit, Transfer points, Over size discharge area, Product separation area, Bagging area	
	Product processing area	unit, Transfer points, Over size discharge area, Product separation area, Bagging area	
	Other areas	As specified by State Pollution Control Board/Pollution Control Committee	
		C. Effluent Standards	
	pH	5.5-9.0	
	Total suspended solids	100 mg/l	
	Oil and grease	10 mg/l	
	Chemical oxygen demand	250 mg/l	
	Note.-(i) All efforts shall be made to reuse and re-circulate the water and to maintain "Zero discharge".		
	(ii) Stormwater drain shall be provided within the premises of the industry so as to avoid mixing with effluent.		
100. []	Common Hazardous Waste Incinerator	A. Emission Limiting concentration in mg/Nm ³ , unless stated	Sampling Duration in (minutes) unless stated
	Particulate Matter	50	30
	HCl	50	30
	SO ₂	200	30

CO	100	30
	50	24 hours
Total Organic Carbon	20	30
HF	4	30
NO _x (NO and NO ₂ expressed as NO ₂)	400	30
Total dioxins and furans	0.1 ngTEQ/Nm ³	8 hours
Cd+Th+their compounds	0.05	2 hours
Hg and its compounds	0.05	2 hours
Sb+As+Pb+Co+Cr+Cu+Mn+Ni+V+their compounds	0.50	2 hours

Notes. -

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

(ii) The CO₂ concentration in tail gas shall not be less than 7%.

(iii) In case, halogenated organic waste is less than 1% by weight in input waste, all the facilities in twin chamber incinerator shall be designed to achieve a minimum temperature of 950°C in secondary combustion chamber and with a gas residence time in secondary combustion chamber not less than 2 (two) seconds.

(iv) In case halogenated organic waste is more than 1% by weight in input waste, waste shall be incinerated only in twin chamber incinerators and all the facilities shall be designed to achieve a

		<p>minimum temperature of 1100°C in secondary combustion chamber with a gas residence time in secondary combustion chamber not less than 2 (two seconds).</p> <p>(v) incineration plants shall be operated (combustion chambers) with such temperature, retention time and turbulence, as to achieve Total Organic Carbon (TOC) content in the slag and bottom ashes less than 3%, or their loss on ignition is less than 5% of the dry weight.</p>	
101. []	Incinerator for Pesticide Industry	<p>Particulate Matter</p> <p>HCL</p> <p>SO₂</p> <p>CO</p> <p>Total Organic Carbon</p> <p>Total Dioxins and Furans* Existing Incinerator</p> <p>New Incinerator</p> <p>Sb + As + Pb + Cr + Co + Cu + Mn + Ni + V + their compounds</p> <p>*The existing plant shall comply with norms for dioxins and furans as 0.1 ng/TEQ/Nm³ within a period of five years from the date of publication of</p>	<p>A. Emission Limitation concentration in mg/Nm³, unless stated</p> <p>50</p> <p>50</p> <p>200</p> <p>100</p> <p>20</p> <p>0.2 ngTEQ/Nm³</p> <p>0.1 ngTEQ/Nm³</p> <p>1.5</p>

this notification.

Notes.-

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

(ii) The CO₂ concentration in tail gas shall not be less than 7%.

(iii) In case, halogenated organic waste is less than 1% by weight in input waste, all the facilities in single chamber incinerator shall be designed so as to achieve a minimum temperature of 1100°C, in the incinerator. For fluidized bed technology incinerator, temperature shall be maintained at 950°C.

(iv) In case halogenated organic waste is more than 1% by weight in input waste, waste shall be incinerated only in twin chamber incinerators and all the facilities shall be designed to achieve a minimum temperature of 1100°C in secondary combustion chamber with a gas residence time in secondary combustion chamber not less than two seconds.

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

(vi) Incineration plants shall be operated

(combustion chambers) with such temperature, retention time and turbulence, as to achieve Total Organic Carbon (TOC) content in the slag and bottom ashes less than 3%, and their loss on ignition is less than 5% of the dry weight.

(vii) The incinerators shall have a chimney of at least thirty metre height.

B. Wastewater

(i) Wastewater (scrubber water and floor washings) shall be discharged into receiving water conforming to the norms prescribed under Schedule VI: General Standards for Discharge of Environment Pollutants (Part A: Effluents) notified under the Environment (Protection) Rules, 1986.

(ii) The built up in Total Dissolved Solids (TDS) in wastewater of floor washings shall not exceed 1000 mg/l over and above the TDS of raw water used.

102. []	Refractory Industry	A. Emission Standards		
		(Q Down Draft Kiln (Fuel: Coal))		Limiting concentration (mg/Nm ³)
		Particulate matter	Category* small/medium/large	350
		Minimum (metre)		
		Stack height	small medium	15 18

(ii) Other than Down Draft Kiln (Fuel: Coal)	large	21
	Category*	Limiting concentration (mg/Nm ³)
	Particulate Matter	300
	medium	200
	large	150
		Minimum (metre)
Stack height	small	15
	medium	18
	large	21
(iii) Box, Tunnel, Down Draft Kiln, etc. (Fuel: Natural Gas/Producer Gas/LPG or a combination of Fuels/Furnace Oil as Secondary Fuel)		
	Category*	Limiting concentration (mg/Nm ³)
	small	200
	Medium/ large	150
Stack height		Minimum (metre)
	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) Rotary Kiln (Fuel: Furnace Oil)		
	Category**	Limiting concentration (mg/Nm ³)
	small	200
	Medium/ large	150

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

Notes.-

(i) All values of particulate matter are to be corrected at 6 per cent Carbon Dioxide.

(ii) Fugitive emission shall not exceed 10 mg/m³ from any process or plant.

(iii) Each stack shall be at least 2 metre above the top most point of the building, shed or plant in the industry excluding bucket elevator, mill house and vibrating screen.

(iv) If more than one kiln is connected to single stack, sum of the production capacity of all the kilns would be considered for determining the capacity of the kiln and accordingly depending upon the total capacity, emission standard and stack height would be implemented.

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

charging and average of these two results shall be considered as emission level.

B. Effluent Standards

Limiting value for concentration

Inland Surface Water Public Sewer

pH	5.5 to 9.0	5.5 to 9.0
Oil and Grease	10	20
BOD 3 days, 27°C	30	250
COD	250	-
Suspended Solids	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 Seed Processing Industry	A-Emission Standards
	Process	Limiting concentration (mg/Nm ³)
Particulate matter	Roasting	250
Cooking (roasted shell/deoiled cake as fuel)	150	
Borma Oven Heater (roasted shell/deoiled cake as fuel)	150	
Stack height		minimum (metres)
	Roasting	20
	Cooking	15
	Borma Oven Heater	15

Note: All values of particulate matter shall be corrected at 4%

Carbon Dioxide Each stack

shall be at least 2 metres above the top most point of the building, shed or plant in the industry. The emissions from 'Dog-house' shall be channelised along with Roasting-drum emissions and shall pass through wet scrubber. Bio-gasifiers shall be installed if roasted shells are used as fuel in the unit.

B-Effluent standards

	Limiting concentration in mg/l, except for pH		
	Inland surface Water	Public sewer	Land For Irrigation
pH	6.5 to 8.5	6.5 to 8.5	6.5 to 8.5
Oil Grease	10	20	10
BOD 3 days, 27°C	30	250	100
Suspended Solids	100	600	200
Phenols	1	5	

Sl. No.	Industry	Parameters	Standards
1	2	3	4
		Effluent discharge standards (applicable to all mode of disposal)	

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)		20		

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

Areas/regions other than mentioned above	100	
Fecal Coliform (FC) (Most Probable Number per 100 milliliter, MPN/100ml)	Anywhere in the country	1000
<p>*Metro Cities are Mumbai, Delhi, Kolkata, Chennai, Bengaluru, Hyderabad, Ahmedabad and Pune. Note: (i) All values in mg/l except for pH and Fecal Coliform. (ii) These standards shall be applicable for discharge into water bodies as well as for land disposal/applications. (iii) The standards for Fecal Coliform shall not apply in respect of use of treated effluent for industrial purposes. (iv) These Standards shall apply to all STPs to be commissioned on or after the 1st June, 2019 and the old/existing STPs shall achieve these standards within a period of five years from date of publication of this notification in the Official Gazette. (v) In case of discharge of treated effluent into sea, it shall be through proper marine outfall and the existing shore discharge shall be converted to marine outfalls, and in cases where the marine outfall provides a minimum initial dilution of 150 times at the point of discharge and a minimum dilution of 1500 times at a point 100 meters away from discharge point, then, the existing norms shall apply as specified in the general discharge standards. (vi) Reuse/Recycling of treated effluent shall be encouraged and in cases where part of the treated effluent is reused and recycled involving possibility of human contact, standards as specified above shall apply. (vii) Central Pollution Control Board/State Pollution Control Boards/Pollution Control Committees may issue more stringent norms taking account to local condition under section 5 of the Environment (Protection) Act, 1986;.]</p>		

SI. No.	Type of industrial boiler Standards (fuel wise)
SO ₂	NO _x
[106 [Inserted by Notification No. G.S.R. 96 (E), dated 29.1.2018 (w.e.f. 19.11.1986).]	Agro based fuel*
106A	Natural gas*
106B	Other fuels **
	600 mg/Nm ³ at 6% dry O ₂ for solid fuel and 3% dry O ₂ for liquid fuel
	300 mg/Nm ³ at 6% dry O ₂ for solid fuel and 3% dry O ₂ for liquid fuel]

The boiler used in the industries, namely (1) sugar (2) cotton textiles (3) composite woollen mills (4) synthetic rubber (5) pulp and paper (6) distilleries (7) leather industries (8) calcium carbide (9) carbon black (10) natural rubber (11) asbestos (12) caustic soda (13) small boilers (14) aluminium plants (15) tannery (16) inorganic chemical and other such industries using boilers, shall adhere to emission norms in the said notification.* It is required to meet stack height criteria notified vide G.S.R. 176(E), dated the 2nd April, 1996.** The emissions from such industries need to be monitored and, all such industries as referred at Sl.No.105C of the Table would be required to install online monitoring system as per online monitoring mechanism put in place by Central Pollution Control Board from time to time. Note: • For captive power plants using Solid fuels such as coal, lignite, etc. the emission limit notified for Thermal Power Plants vide notification no S.O. 3305 (E), dated 7th December, 2015 shall be applicable. • The standards set herein will not apply to any ban or restriction put in place by Competent Authority and for non-attainment cities, State Pollution Control Board or Pollution Control Committee may regulate or ban use of Pet Coke and Furnace Oil on the basis of available data.

[Sl. No. [Inserted by Notification No. G.S.R. 263 (E), dated 22.3.2018 (w.e.f. 19.11.1986).]

SO ₂ (mg/Nm ³)	Type of Industrial Sector	Standards
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]

Note: *It is required to meet stack height criteria publication vide notification number G.S.R 475 (E), dated the 5th May, 1992 published in Gazette No. 202 dated 5th May 1992.**It is required to meet stack height criteria publication vide notification number G.S.R. 742 (E), dated the 30th August, 1990 published in Gazette No. 365 dated 30th August, 1990.***It is required to meet stack height criteria publication vide notification number G.S.R 93 (E), dated 21st February, 1991

published in the Gazette No. 79 dated the 27th February, 1991.*****The lime kiln shall ensure that the minimum stack height is in accordance with Environment Protection Act, 1986 as amended from time to time and relevant direction of SPCBs / PCCs shall to adhere to. It shall be the concerned SPCB / PCC to increase the stake height, if required based on the scientific studies, keeping in view the habitations around such lime kilns.*****It is required to meet stack height criteria publication as prescribed by SPCBs/PCCs.

Sl. No.	Industry	Parameters	Standards
1	2	3	4
Ambient Air Quality Standards with respect to Noise 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		
	Clear and bright, Free from un-dissolved water, foreign matter and other visible impurities	Clear and bright, Free from un-dissolved water, foreign matter and other visible impurities	
Appearance			
Acidity, inorganic	Nil	Nil	
Burning quality(2)			
(a) Char value, mg/Kg of oil consumed, Max	20	20	
(b) Bloom on glass Chimney	Not darker than grey	No darker 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/m ³	Not limited, but to be reported	Not limited, but to be reported	
Distillation			
(a) Percent recovered below 2000C,	20	20	

percent(v/v),Min

(b) Final boiling point, °C, Max	300	300
Flash point (Abel), °C, 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 shall make 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 required to meet Indian Standard IS 1459:2018 for Kerosene Specifications (Fourth Revision), ICS No. 75.160.20, published in July, 2018]

[114 [Substituted by Notification No. G.S.R. 952(E), dated 26.12.2019 (w.e.f. 19.11.1986).]	Automobile Service Station, Bus Depot or Workshop	Effluent Standard (Concentration not to exceed, in mg/l except for pH)
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Inland Surface water/land for irrigation/Public Sewer

pH	6.5-8.5
Total Suspended Solids	50
Chemical Oxygen Demand	150
Oil and Grease	10

Note. (i) For Service Stations, Bus Depots and Workshops with metal pre-treatment facilities, limit of 5 mg/l of dissolved phosphates (as P) and 5 mg/l of zinc shall also apply.(ii) Solid Wastes/ Hazardous Waste, if any, shall be disposed off as per the Solid Waste Management Rules, 2016.] Definitions:(a)*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is related 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-and-go 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 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.]

115. [Regulation on Use of Water Purification System (WPS) [Inserted by Notification No. G.S.R. 724(E), dated 4.10.2021 (w.e.f. 19.11.1986).]

1. Definition. (i) BIS means the Bureau of Indian Standard which is the national Standards Body of India working under the aegis of the Ministry of Consumer Affairs, Food and Public Distribution, Government of India;

(ii) CPCB means the Central Pollution Control Board constituted under the provision of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);(iii) Discarded element means element which is discarded or removed from the Domestic Water Purification System due to either manufacturing defects, wear, tear, loss of its utility attributes or achieved its end of life usability, or is replaced due to non-functioning at designed parameter;(iv) Manufacturer means a person or an entity or a company as defined in the Companies Act, 2013 (18 of 2013) or a factory as defined in the Factories Act, 1948 (63 of 1948) or Small and Medium Enterprises as defined in Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006), which has facilities for manufacturing or assembling of filters;(v) Point of use (PoU) means location of water purification system close to the use point and deliver directly to a single tap or multiple tap such as a kitchen sink faucet or an auxiliary faucet;(vi) Reject water means water coming out of WPS and not considered as treated by the system;(vii) SPCB or PCC means State Pollution Control Board for State or Pollution Control Committee in case of Union territory, as the case may be, constituted under the provision of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);(viii) Type approval means certificate of conformity to a product that meets a minimum set of regulatory, technical and safety requirements, and is required before the product is allowed to be sold;(ix) Domestic Water Purification System (DWPS) means equipment or devices, which involves Reverse Osmosis based Point of Use (PoU) water treatment system with a capacity of up to 25 litres per hour that reduces Total Dissolved Solids (TDS) of water, reduces chemical contamination to safe level and removes physical particles including microbiological impurities at PoU;(x) Other than Domestic Water Purification System (ODPWS) means equipment or devices, which involves Reverse Osmosis based water treatment system that reduces Total Dissolved Solids (TDS) water, reduces chemical

contamination to safe level and removes physical particles including microbiological impurities at PoU;(xi) Water Supply Agency means any entity, organisation, Department of State Government, local urban bodies, public or private sector entities engaged in treatment, distribution or supply or both of water in a given geographical area on commercial or obligatory responsibility basis arising due to statutory provision of applicable law.

2. Regulation on use. - (1) All users of DWPS and ODWPS shall comply with the guidelines issued by CPCB.

(2)A guideline shall be published by the Central Pollution Control Board for handling, storage, management and utilisation of reject generated from DWPS and ODWPS within a period of six months from the date of publication of the Environment (Protection) 115 Amendment Rules, 2021.(A)DWPS. - (i) All manufactured, imported, produced or assembled DWPS shall bear the Standard Mark under a license from the Bureau of Indian Standards as per the Indian Standard IS 16240, as amended from time to time, under Scheme I, Schedule - II of the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018.(ii)Discarded elements from DWPS shall be managed as per the provisions of the Plastic Waste Management Rules, 2016; E-Waste (Management) Rules, 2016; Hazardous Waste Management Rules, 2016, as amended from time to time and plastic, electronic and electrical waste generated as discarded elements shall be brought under Extended Producer Responsibility (EPR).(B)ODWPS. - (i) Shall be regulated under the provisions of the Water (Prevention and Control of Pollution), Act, 1974 (6 of 1974) and various rules under the Environment (Protection) Act, 1986.(ii)The nodal agency for implementation shall be the State Pollution Control Board or the Pollution Control Committee, as the case may be.

3. Responsibilities. -

(A)DWPS(a)Manufacturer(i)The manufacturer shall obtain Standard Mark under a license from the Bureau of Indian Standards as per the Indian Standard IS 16240 (as amended from time to time) under Scheme I, Schedule- II of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 within period of eighteen months from the date of publication of the Environment (Protection) 115 Amendment Rules, 2021.(ii)Discarded elements from DWPS shall be managed by the manufacturer as per the provisions of the Plastic Waste Management Rules, 2016; E-Waste (Management) Rules, 2016; Hazardous Waste Management Rules, 2016 and as amended from time to time, and plastic, electronic and electrical waste generated as discarded elements shall be brought under Extended Producer Responsibility (EPR).(iii)No DWPS shall be sold by the manufacturer without BIS certification as per sub-clause (i) of the clause (A) of paragraph 2.(iv)The manufacturer shall submit compliance report to SPCB or PCC, as the case may be, for further submission to CPCB latest by the 30th November of following financial year.(b)CPCB(i)The CPCB shall be the nodal agency for implementation of the provisions of this paragraph.(ii)The CPCB shall prepare and publish guidelines for management, storage, utilisation and disposal of reject water generated from DWPS within a period of six months from the date of publication of the Environment (Protection) 115 Amendment Rules, 2021.(iii)The CPCB shall create public awareness through advertisement, publication, posters or by other means of communication.(iv)The CPCB shall monitor the implementation these provisions.(c)User: The user shall comply with the

guidelines issued by CPCB for management, storage, utilisation and disposal of reject water generated from DWPS or ODWPS, as applicable.(d)BIS : The BIS shall prepare or modify the applicable standard code (IS 16240) for DWPS having regard to the available technology, corresponding recovery efficiency and output water quality reliability.

4. ODWPS

(a)User : (i)The user shall apply for authorisation within a period of six months from the date of publication of the Environment (Protection) 115 Amendment Rules, 2021 to the State Pollution Control Board or the Pollution Control Committee, as the case may be, for grant of registration as per the provisions of rules made under the Environment (Protection) Act, 1986 and shall comply with the conditions stipulated therein.(ii)The user shall operate within the provisions of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and the rules made under the Environment (Protection) Act 1986;provided that the installations operating on or before the date of publication of the Environment (Protection) 115 Amendment, Rules, 2021 shall apply for Consent to Operate, wherever applicable, to the concerned State Pollution Control Board or Pollution Control Committee, as the case may be, within a period of six months from the date of publication of the said rules.(b)State Pollution Control Board or Pollution Control Committee(i)The State Pollution Control Board or Pollution Control Committee, as the case may be, shall ensure that all ODWPS are regulated within the provisions of the Water (Prevention and Control of Pollution), Act, 1974 (6 of 1974) and rules made under the Environment (Protection) Act 1986.(ii)The State Pollution Control Board or Pollution Control Committee, as the case may be, shall register manufacturers and importers of ODWPS, as per the provisions of the Plastic Waste Management Rules, 2016, E-Waste (Management) Rules, 2016.(iii)The State Pollution Control Board or Pollution Control Committee, as the case may be, shall create public awareness through advertisement, publication, posters or by other means of communication.(iv)The State Pollution Control Board or Pollution Control Committee, as the case may be, shall monitor the implementation of these provisions.(v)The State Pollution Control Board or Pollution Control Committee, as the case may be, shall submit compliance report to CPCB latest by the 15th December of following financial year.(c)Central Pollution Control Boardi. The Central Pollution Control Board shall compile annual reports received from SPCBs or PCCs for submission to the Ministry of Environment, Forest and Climate Change latest by the 30th December of following financial year.

4. General conditions. (1) Water Supply Agency (WSA), concerned Local Bodies like Public Health Engineering Department (PHED), Jal Nigam, Municipal Corporation, Jal Board, Municipalities, Private and Public Sector Agencies engaged in potable water supply, shall inform the consumers about the water sources and quality including Total Dissolved Solids (TDS) concentration of water being supplied through billing instruments and also through public advertisement in newspaper and other mass media means on regular basis.

(2) Every DWPS 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 product and not normally requiring replacement during the life of the product. (3) The conformance label shall contain the following information, namely: -(a) Name and address of the manufacturer or assembler of product, as the case may be. (b) Statement that the product conforms to the Environment (Protection) Rules, 1986. (c) Type Approval certificate number. (d) Date of manufacture of product or in case of import, the date of import of the product ; and (e) Rated recovery efficiency and corresponding water reject generation. (4) In case of any dispute or difficulty in implementation of these provisions, the matter shall be referred to the nodal agency. (5) The nodal agency shall constitute a Standing Committee for process integrity and recovery efficiency assessment related issues and to advise on all matters related to implementation of these provisions including disposal of disputes, if any]. [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 not 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 manufacturers 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 in charge 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 in charge 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
150 < R ≤ 350	12+	18(R-150)200
R > 350	30	8+ 4(R-150)200
		12

Light Duty Vehicles :

Reference Mass, rw(kg) CO(g/km) HC(g/km)

1	2	3
rw \leq 1020	14.3	2.0
1020 rw \leq 1250	16.5	2.1
1250 rw \leq 1470	18.8	2.1
1470 rw \leq 1700	20.7	2.3
1700 rw \leq 1930	22.9	2.5
1930 rw \leq 2150	24.9	2.7
rw \leq 2150	27.1	2.9

2. Conformity of Production Tests :

Two and Three Wheeler Vehicles

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

1	2	3
R150	15	8
150R \leq 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 \leq 1020	17.3	2.7
1020rw \leq 1250	19.7	2.7
1250rw \leq 1470	22.5	2.8
1470rw \leq 1700	24.9	3.0
1700rw \leq 1930	27.6	3.3
1930rw \leq 2150	29.9	3.5
rw \leq 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/acc ²)	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
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 15°C	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
		2	2

	(f) Residue per cent by volume, Max.			
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/cm ³ , 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
		200	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 and Forest	-		
(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 under 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.		(i) Conservator of Ports	

	Port as defined under the Indian Ports Act, 1908		The Indian Ports Act, 1908
(ii) The Ministry of Environment and Forests	-		
4.	Plantation as 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	Public	Land for	Marine	

		water	Sewers	irrigation	coastal areas
1	2	3(a)	3(h)	3(c)	3(d)
1.	Colour and odour	See 6 of Annexure I	-	See 6 of Annexure I	See 6 of Annexure 1
2.	Suspended solids mg/l, 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 [10] [Substituted for the words "20" by Notification No. G.S.R. 739 (E) dated 9.9.2010 (w.e.f. 19.11.1986)]
7.	Oil and grease mg/l, Max.	10	20	10	
8.		1.0	-	-	1.0

	Total residual chlorine mg/1, Max.				
9.	Ammoniacal Nitrogen (as N), mg/1, Max.	50	50	-	50
10.	Total Kjeldahl nitrogen ¹ [N]; mg/1, Max.	100	-	-	100
11.	Free Ammonia ¹ [NH ₃]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.	Hexavalent chromium (as Cr+6) mg/l, 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.	2.0	15	-	15

	31.12.1993).](as F) mg/1, Max.				
30.	Dissolved Phosphates (as P) mg/1, Max [***] [Omitted by G.S.R. 801(E), dated 31-12-1993 (w.e.f. 31-12-1993).]	5.0	-	-	-
32.	Sulphide(as S) mg/1, Max. Phenolic compounds[as C ₆ H ₅ OH] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]mg/1, Max.	2.0	-	-	5.0
33.	Radioactive materials: (a) Alpha emitters[Micro curie/ml] Max. (b) Beta emitters[Micro curie/ml] [Substituted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]Max.	1.0	5.0	-	5.0
34.		10 ⁻⁷	10 ⁻⁷	1[10 ⁻⁸]	10 ⁻⁷
		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 [***] [Entry 40 omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]	10mg/1	-	-	20 mg/1

Part B

Waste-Water Generation Standards

Sl.No	Industry	Quantum
1.	Integrated IronSteel	16 [m3/tonne]of finished steel
2.	Sugar	

		0.4 [m ³ /tonne] of cane crushed
3.	Pulp Paper Industries	
	(a) Larger pulppaper	
	(i) Pulppaper	175 [m ³ /tonne] of paper produced
	(ii) [Viscose Staple Fibre	150 m ³ /tonne of product
	(iii) Viscose Filament Yarn	500 m ³ /tonne of product]
	(b) Small pulppaper:	
	(i) Agro-residue based	150 [m ³ /tonne] of paper produced
	(ii) Waste paper based	50 [m ³ /tonne] of paper produced
4.	Fermentation Industries	
	(a) Maltry	3.5 [m ³ /tonne] of grain produced
	(b) Brewery	0.25 [m ³ /KL] of beer produced
	(c) Distillery	12 [m ³ /KL] of alcohol produced
5.	Caustic Soda	
	(a) Membrane cell process	1 [m ³ /tonne] of caustic soda produced excluding cooling tower blow down
	(b) Mercury cell process	4 [m ³ /tonne] of caustic soda produced (mercury bearing). 10% blow down permitted for cooling tower
6. [Substituted by Notification No. G.S.R. 1095(E), dated 9.11.2018.]	(a) Viscose Staple Fibre (VSF) Plant (b) Viscose Filament Yarn (VFY) Plant (c) Nylon Polyester (d) Acrylic- (i) Wet Process (ii) Dry Process	75 m ³ /tonne of fibre 150 m ³ /tonne of fibre 10 m ³ /tonne of fibre 25 m ³ /tonne of fibre 10 m ³ /tonne of fibre.]
7.	Tanneries	28 [m ³ /tonne] of raw hide

8.	Starch, Glucose and related products	8 [m ³ /tonne] of maize crushed
9.	Dairy	3 [m ³ /KL] of milk
10.	Natural rubber processing industry	4 [m ³ /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 m ³ /tonne of Urea or equivalent produced
	Straight Phosphatic Fertilizer (Single Super Phosphate (SSP) Triple Super Phosphate (TSP) excluding manufacturing of any acid	0.4 m ³ /tonne of SSP or TSP
	Complex Fertilizer	Standards of nitrogenous and Phosphatic fertiliser are applicable depending on the primary product.]
12.	Natural Rubber Processing Industry : Centrifuging and Creaming Units and Craps and Crumb Units- 5 m ³ /tonne of product in Centrifuging units; - 8 m ³ /tonne of product in Creaming units; and - 40 m ³ /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, 27°C	6.0
3. COD ₃	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 and Grease	1.5
BOD, 3 days at 27°C	200
Suspended Solids	200
Total Chromium	0.10
Lead	0.15

Part D

General Emission Standards

1. Concentration Based Standards:

Sl. No.	Parameter Concentration not to exceed (in mg/Nm ³)	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/Nm ³] [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		

	[***] [Omitted by G.S.R. 801(E), dated 31.12.1993 (w.e.f. 31.12.1993).]	
8.	Sulphuric acid mist	50 [1% max (v/v)]
9.	Carbon monoxide	[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/Nm ³] [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 Unit II. 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 to 5 [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	Existing Unit	New Unit
1.	[Fertiliser](Urea)				
	Commissioned prior to 1-1-1982	[Particulate Matter (PM)]	2 [kg/tonne] of product		
	Commissioned after 1-1-1982	[Particulate Matter (PM)]	0.5 [kg/tonne] of product		
			Quantum Limit in kg/tonne Plant capacity for 100% concentration of Sulphuric Acid (tonne/day)		
2. [] [Substituted by Notification No. G.S.R. 354 (E) dated 2.5.2011 (w.e.f. 19.11.1986)]	Copper, Lead or Zinc Smelting Plant	Sulphur-Dioxide (SO ₂)	Upto 300 Above 300	2.5	2.0
				2.0	1.5
3.	Nitric Acid	Oxides of Nitrogen	3 [kg/tonne] of weak acid (before concentration) produced Quantum Limit in kg/tonne Plant capacity 100% Concentration of Sulphuric 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.	Sulphuric Acid Plant	Sulphur dioxide (SO ₂)	Up to 300	2.5	2.0

19.11.1986).]

			Above 300	2.0	1.5
5.	Integrated Iron and Steel Plant	Carbon monoxide Particulate matter during coke pushing in coke oven Particulate matter for quenching operation in Coke Oven	3kg/tonne of coke produced 5 gramme/tonne of coke produced 50 gramme/tonne of coke produced.”		
6.	Petroleum Oil Refinery (Sulphur Recovery)		Installed Capacity of SRU* (tonne/day)	Kg/tonne of sulphur in the feed to SRU	New SRU
			above 20	26	10
		Sulphur Dioxide	5 to 20	80	40
			up to 5	120	80]
	[***]				
7.	Aluminium Plants:				
	(i) Anode Bake Oven	Total Fluoride	0.3 Kg/MT of Aluminium		
	(ii) Pot room				
	(a) VSS	-do-	4.7 Kg/MT of Aluminium		
	(b) HSS	-do-	6 Kg/MT of Aluminium		
	(c) PBSW	-do-	2.5 Kg/MT of Aluminium		
	(d) PBCW	-do-	1.0 Kg/MT of Aluminium		
	Note:				
	VSS	= Vertical Stud Soderberg			
	HSS	= Horizontal Stud Soderberg			
	[PBSW]	= Pre Backed Side Work			
	PBCW	= Pre Backed Centre 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 (TolueneDi-isocyate) TDI,	100		
VOC-HAPs (TDI+MDI)	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 emission	50.0		
10. (sic)				
10A. (sic)				
11. [[Inserted by Notification No. G.S.R. 1095(E), dated 9.11.2018.]		Manmade Fibre		A. Emission Standards
(a) Viscose StapleFibre (VSF) Plant(b) Viscose FilamentYarn (VFY) Plant(c) Rayon, Polyester and Nylon fabric (Dippingprocess Plant only)		Carbon Disulphide		95 kg/ tonne of VSF
Hydrogen Sulphide			30 kg/ tonne of VSF	
Carbon Disulphide			200 kg/ tonne of VFY	

Hydrogen Sulphide	30 kg/ tonne of VFY
Ammonia	0.3 kg /tonne of dipped Fabric.]

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 cm ³	75	
	Displacement more than 80 cm ³ but upto 175 cm ³	77	1st January, 2003
	Displacement more than 175 cm ³	80	
2.	Three wheeler		
	Displacement upto 175 cm ³	77	
	Displacement more than 175 cm ³	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, Farukhabad, Saharanpur, Badaun, Barreilly, 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 chloric 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 by Central Government)	Methods of Measurement			
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual*24 hours**	5080	2080	- Improved West and Gaeke- Ultraviolet fluorescence
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual*24 hours**	4080	3080	- Modified Jacob Hochheiser (Na-Arsenite)-Ultraviolet fluorescence
3	Particulate Matter (size less than 10µm) or PM ₁₀ µg/m ³	Annual*24 hours**	60100	60100	- Gravimetric- TOEM- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM _{2.5} µg/m ³	Annual*24 hours**	4060	4060	- Gravimetric- TOEM- Beta attenuation
5	Ozone(O ₃) µg/m ³	8 hours** ¹ hour**	100180	100180	- UV photometric- Chemi Iminescence- Chemical Method

6	Lead(Pb) µg/m ³	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/m ³	8 hours1 hour	0204	0204	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia(NH ₃)µg/m ³	Annual*24 hours**	100400	100400	- Chemiluminescence- Indophenol blue method
9	Benzene(C ₆ H ₆) µg/m ³	Annual*	05	05	- Gas chromatography based continuous analyzer- Adsorptionand Desorption followed by GC analysis
10	Benzo(□) Pyrene (BaP) - particulate phase only, ng/m ³	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic(As), ng/m ³	Annual*	06	06	- AAS/ICP method after sampling on EPM 2000 or equivalentfilter paper
12	Nickel (Ni), ng/m ³	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			Method of Measurement
		Industrial Area	Residential, Rural and Other Area	Sensitive Area	
(1)	(2)	(3)	(4)	(5)	(6)
SulphurDioxide	Annual Average*	80µg/m ³	60µg/m ³	15µg/m ³	- Improved West and Greke method
(SO) ₂	24hours**	120µg/m ³	80µg/m ³	30µg/m ³	- Ultraviolet Fluorescence
Oxides of nitrogen as No ₂	Annual Average	80µg/m ³	60µg/m ³	15µg/m ³	- Jacab and Hochheiser modified (Na-Arsenite) Method
	24hours**	120µg/m ³	80µg/m ³	30µg/m ³	- Gas Phase Chemiluminescence
Suspended Particulate Matter (SPM)	Annual Average*	360µg/m ³	140µg/m ³	70µg/m ³	- High Volume Sampling
	24hours**	500µg/m ³	200µg/m ³	100µg/m ³	- [Average flow rate not less than1.1m ³ /minute]
RespirableParticulate Matter (size less than 10 um) (RPM)	Annual Average*	120µg/m ³	60µg/m ³	50µg/m ³	- Respirable Particulate matter sampler.
	24hours**	150µg/m ³	100µg/m ³	75µg/m ³	
Lead (Pb)	Annual Average*	1.0µg/m ³	0.75µg/m ³	0.50gg/m ³	- AAS method after sampling using EMP 2000 or
	24hours**	1.5µg/m ³	1.00g/m ³	0.75µg /m ³	equivalent filter paper.
Carbon	8hours**	5.0mg/m ³	2.0mg/m ³	1.0mg/m ³	- Non-dispersive, infrared spectroscopy.
Monoxide	1hour	10.0mg/m ³	4.0mg/m ³	2.0mg/m ³	

*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 A FORM I (See rule 7) NOTICE OF INTENTION TO HAVE SAMPLE ANALYSED To..... 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 ANALYST From..... To The 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 ANALYST Report 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 NOTICE By registered post-acknowledgment due From (1) Shri To under section 19(b) of the Environment (Protection) Act, 1986 Whereas 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
DateSignature(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 m³/d Process Cooling Domestic

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	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 of pollutants 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.