REGULATORY FRAMEWORK ON

LEAD AND ITS COMPOUND IN INDIA

About Toxics Link

Toxics Link is an Indian environmental research and advocacy organisation set up in 1996, engaged in disseminating information to help strengthen the campaign against toxics pollution, provide cleaner alternatives and bring together groups and people affected by these problems. Toxics Link has a unique expertise in areas of hazardous, plastic, medical and municipal wastes, international waste trade, and emerging issues of pesticides, Persistent Organic Pollutants (POPs), hazardous heavy metal contamination, etc. We have successfully implemented various best practices and have contributed to policy changes in the aforementioned areas apart from creating awareness among several stakeholder groups.

Toxics Link's Mission Statement - "Working together for environmental justice and freedom from toxics, we have taken upon ourselves to collect and share both information about the sources and the dangers of poisons in our environment and bodies, and information about clean and sustainable alternatives."

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Abbreviations

BIS	Bureau of Indian Standards
BMW	Battery Waste Management
CAGR	Compound Annual Growth Rate
Cd	Cadmium
CDSCO	Central Drugs Standard Control Organisation
CPCB	Central Pollution Control Board
CPSC	Consumer Product Safety Commission
CRTs	Cathode-Ray Tubes
DPIIT	Department for Promotion of Industry and Internal Trade
EEE	Electrical and Electronic Equipment
EPA	Environmental Protection Agency
EPR	Extended Producer Responsibility
EU	European Union
E-waste	Electronic waste
FSSAI	Food Safety and Standards Authority of India
GPD	Gross domestic product
Hg	Mercury
HW	Hazardous Waste
IARC	International Agency for Research on Cancer
IQ	Intelligence Quotient
mg/L	milligram per litre
MoEF&CC	Ministry of Environment, Forest and Climate Change
MRL	Maximum Residue Level
MSME	Micro, Small, and Medium Enterprises sector
MSMIs	Micro- and Small-Sized Manufacturing Industries
NYU	New York University
Pb	Lead
pmol/kg	picomole per kilogram
ppm	parts per million
RoHS	Restriction of Hazardous Substances
SDS	Safety Data Sheets
SPCB	State Pollution Control Board
TSDF	Treatment, Storage, and Disposal Facility
USD	United States Dollar
WHO	World Health Organization

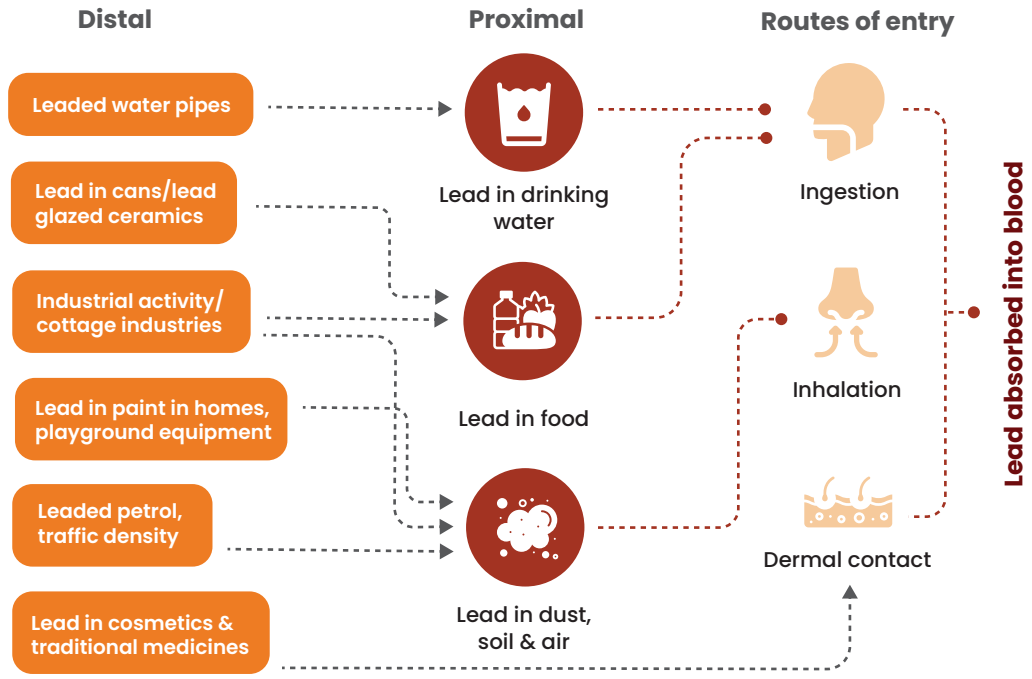
01 → Introduction

Lead (Pb) is a highly toxic metal with no biological function in the human body. Its persistence in the environment and tendency to bio accumulate make it a major public health concern. The World Health Organization (WHO) has declared that there is *no safe level of Lead exposure* and identified it as one of the top ten chemicals of major concern globally (WHO, 2021).[1] Lead has also been classified as a Group II human carcinogen by the International Agency for Research on Cancer (IARC).[2]

Children are especially vulnerable due to their developing nervous systems and behavioural patterns such as frequent hand-to-mouth contact. Even at very low concentrations, Lead can impair neurological development, reduce IQ, cause learning disabilities, behavioural disorders, and attention deficits. In adults, long-term exposure contributes to hypertension, renal dysfunction, reproductive impairment, anaemia, and cardiovascular disease. These health outcomes impose both direct health burdens and indirect socioeconomic costs by reducing lifetime productivity and increasing medical expenditure.[3] A global study by NYU estimated an annual loss for India alone, to be $236 billion per year, or roughly 5% of GDP.[4]

There are various sources of Lead exposure in human that include food, water, soil, dust, and air. The majority of Lead present in environmental matrices is anthropogenic in origin including industrial emissions, lead-acid battery recycling, metal smelting, paints and pigments, petroleum combustion (from Leaded gasoline residues), and improper disposal of electronic waste.

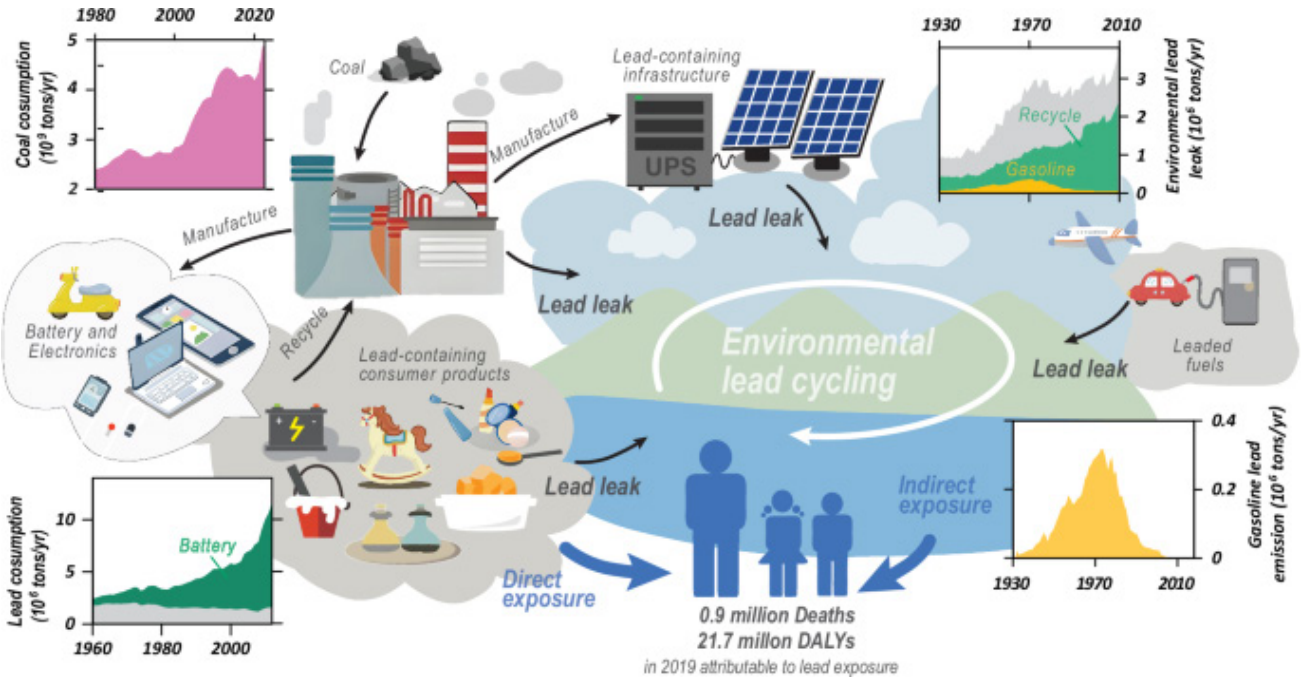
Figure 1. Major sources and routes of environmental Lead exposure. (Adapted from WHO 2021)



Studies have shown that air, and soil act as major sinks of Lead contamination, with elevated concentrations found near industrial clusters and urban areas[5, 6]. Lead also enters surface and groundwater through leaching from contaminated soils and waste dumps.

Atmospheric Lead deposits onto soil and crops.[7, 8, 9] These depositions cause bioaccumulation of Lead in crops and aquatic organisms, hence poses serious health hazards to humans through the food chain.

Figure 2. Schematic of the environmental Lead cycle. Source: Chen et al, 2025



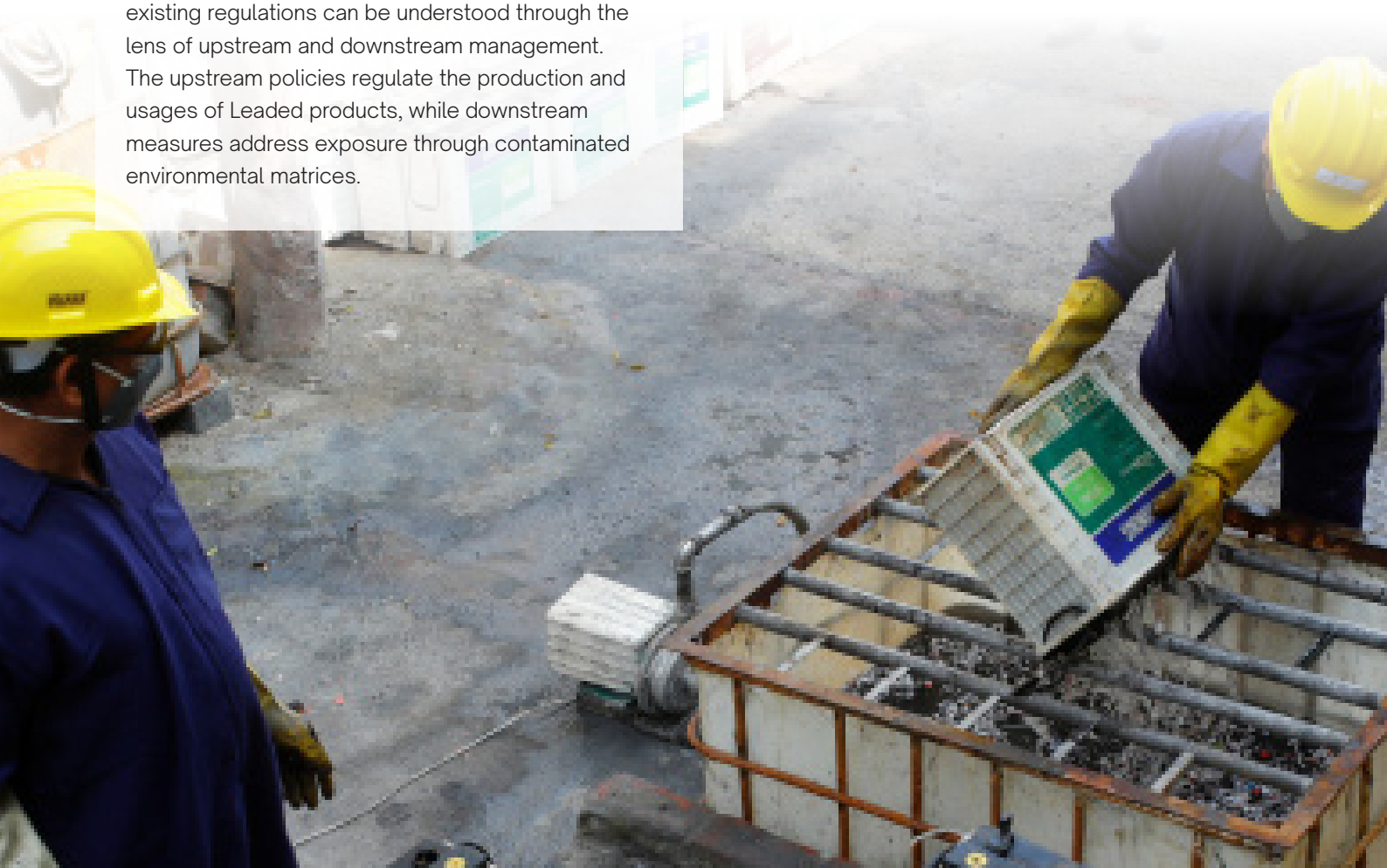
02 →
Regulatory Landscape in India

The growing evidence of the health and environmental impacts of Lead exposure has prompted international and national efforts to strengthen control measures. Many countries have developed regulations and policies aimed at limiting Lead use, phasing out Leaded products, and ensuring safe management of Lead-containing waste.

India has also promulgated regulatory frameworks in place across multiple sectors to minimise the risk of Lead impact; however, these regulations operate in silos such as household decorative paints, toys, food, and industrial uses without any integration into a unified national Lead prevention program.

As Lead exposure occurs through both consumer products as well as environmental matrices, the existing regulations can be understood through the lens of upstream and downstream management. The upstream policies regulate the production and usages of Leaded products, while downstream measures address exposure through contaminated environmental matrices.

This report compiles all existing regulatory framework on Lead in the country. The aim is to develop a comprehensive reference document for all the stakeholders. The report will provide easily accessible information to support informed decision-making and coordinated action to reduce Lead exposure and environmental contamination, hence protecting public health.



Upstream Management: Lead Regulation in the consumer products

2.1 The Drugs and Cosmetics Act, 1940

The Drugs and Cosmetics Act, 1940 and Drugs and Cosmetics Rules 1945, regulate the import, manufacture, distribution and sale of drugs and cosmetics. The rules and guidelines are set under the act to ensure the quality of the products. The "Cosmetic Rules, 2020," came into effect on December 2020, as separate regulations for cosmetics under the broader Act.

Rule 134 and Schedule-S (for cosmetics manufactured in India) and Rule 145 and Schedule-Q (for colours used in cosmetics) of the Drugs and Cosmetics Act, 1940, mention that Cosmetics must not contain any ingredient that may render them harmful or unsafe for human use.

Lead and its compounds are prohibited to be used as raw ingredient or as colorant. Under this Act, the permissible limit for Lead as contaminants/impurities in cosmetics is set at 20 ppm, with mandatory compliance for both domestic manufacturers and importers.

The act comes under the purview of Central Drugs Standard Control Organisation (CDSCO) under the Ministry of Health & Family Welfare. Sections 18 and 27A of the Act give responsibility to the Drugs Inspectors to regularly monitor the products available in the market, and ban, recall, or penalise products exceeding permissible limits of Lead.

2.2 IS 8101 (1976) – Poster colours [Printing, Inks, Stationary and Allied Products], 1976

The standard IS 8101 (1976)[10] was adopted by the Indian Standards Institution on 7 July 1976, after the draft finalised by the Inks and Allied Products. This standard was first published in 1976 and addresses Poster colours that are opaque and matt artists colours in character and are used by designers for commercial work. However, these poster colours are often used for hobby and art by children hence putting them at risk of Lead exposure due to hand-to-mouth behaviours.

In October 2024, BIS has released the first revision for public consultation. The aims were to incorporate technological advancements and ensure safer and more reliable products for consumers by regulating the composition and Lead content in products. The revised standard proposes that poster colours should not contain more than 10 parts per million (ppm) of Lead.[11] The revision is currently under consultation and aims to align Indian standards with global norms for children's products.

2.3 Food Safety and Standards (Contaminants, Toxins and Residues) Regulations, 2011

The Acts stipulates the safety of food and food products. It defines the contaminants, toxins and residues for food safety. In Part 2, Sub-Regulation 2.1.1 of the regulations, limits of Lead contaminants are mentioned across different food commodities. For example, turmeric (10 ppm), leafy vegetables (0.3 ppm), pulses (0.2 ppm), sugar (5.0 ppm), infant food (0.2 ppm), and drinking water (0.01 mg/L, aligned with BIS standards). The details given in Annex II. FSSAI is the nodal agency to ensure food safety through the National Surveillance Programme for Heavy Metals and state food testing laboratories.

Under **Section 3(1) (zz) of this Regulation,** it is illegal to manufacture, sell, or import food items that exceed these limits.

Besides, FSSAI also controls the adulteration of food through "The Prevention of Food Adulteration Act and Rules, 2004". As per the Act, turmeric and spices should be free from Lead chromate.[12]

2.4 IS 10500:2012 – Drinking Water Specification

In India, the quality and safety parameters for drinking water is ensured by the Bureau of Indian Standards (BIS) under IS 10500:2012. It provides limits for various physical, chemical, and microbiological parameters to ensure that water supplied for human consumption is safe, palatable, and wholesome. This standard specifies the acceptable limits and the permissible limits in the absence of alternate source.

According to the guidelines, Lead must not exceed 0.01 mg/L in drinking water, and there is no permissible relaxation, even if no other water source is available. This is in alignment with WHO Guidelines for Drinking Water Quality Recommendations, 2008.

2.5 The Regulation of Lead Contents in Household and Decorative Paints Rules, 2016

The "Regulation of Lead Contents in Household and Decorative Paints Rules, 2016" was notified on the 1st of November 2016 and entered into force on the 1st of November 2017. This regulation prohibits the manufacture, trade, import, and export of household and decorative paints containing Lead or Lead compounds in excess of 90 ppm. The rules direct that all household and decorative paints manufactured or imported after November, 2017 should have the label: "Lead contents do not exceed 90 parts per million" along the manufacturing/ importing date. The manufacturers and importers are also required to get their products tested once a year before putting them in the supply chain.

The Central Pollution Control Board (CPCB) is the nodal agency for the implementation of the provisions of these rules. CPCB has notified the "Procedure for Measurement of Lead Contents in Household and Decorative Paints" rules explaining the applicability, requirements and testing procedure for the Lead in paint regulations. It also entails the procedure for analysis of Lead in Paint and prescribes accredited labs for testing, implementation and monitoring.[13] The rules have also identified The Central Power Research Institute as the authorised testing agency.

2.6 Lead Standards in Toys

The safety of toys manufactured, imported and marketed in India are covered under BIS standard i.e., IS 9873. The Department for Promotion of Industry and Internal Trade (DPIIT), under the "Toys (Quality Control) Order, 2020"[14], has made it mandatory that all toys sold in India comply with BIS standards and bear the BIS Standard Mark (ISI mark).

There are nine parts of this standard that covers various safety aspects of toys such as mechanical & physical properties, flammability, requirements and test methods for finger paints etc.

IS 9873 (Part 3): 2017[15] specifies **maximum migration limits** for toxic elements including Lead. The Lead limits ranges between 25–90 mg/kg depending on the **type of toy material.**

Material Category	Description	Maximum Limit for Lead Migration
Category I – Dry, Brittle, Powder-like, or Pliable Material	e.g., chalk-like toys, modelling clay	25 mg/kg
Category II – Liquid or Sticky Material	e.g., liquid paints, gels, adhesives	50 mg/kg
Category III – Scraped-off Material	e.g., coatings, surface paints, metal parts	90 mg/kg

Besides, there are few complimentary regulations to ensure safety of toys from Lead.

Regulation / Agency	Relevance
Environment (Protection) Act, 1986	Empowers the government to restrict the use of hazardous substances like Lead in consumer goods.
Legal Metrology (Packaged Commodities) Rules, 2011	Requires labelling of toys with manufacturer details, age grading, and safety warnings.
Customs (Prohibition of Import of Unsafe Toys) Notification, 2020	Bans import of toys that do not comply with BIS standards or contain hazardous substances like Lead.

2.7 Lead Stabiliser in Polyvinyl Chloride (PVC) Pipes and Fittings Rules, 2021

The rule was notified on Nov 2019 under section 3 and section 6 of the Environment (Protection) Act, 1986. It became effective from May 2021. It bans use of lead or lead compounds as stabiliser in manufacturing, sale & import of PVC pipes and fittings. The rule also mentioned the extraction limit of lead from all type of PVC pipes & fittings. It should not be more than 1 ppm during first extraction and 0.05 ppm in third extraction.[16]

The State Pollution Control Board (SPCB) and Pollution Control Committee (PCC) are the Nodal Agency for implementation and enforcement of the provisions of these rules.

Downstream Management: Regulations of Lead in the Effluents

2.8 The Water (Prevention and Control of Pollution) Act, 1974

The Water (Prevention and Control of Pollution) Act[17] was enacted in 1974 to provide for the prevention and control of water pollution in the country. The Act was amended in 1988. CPCB and SPCBs are the nodal agency for monitoring water quality, granting consents for effluent discharge, and enforcing pollution control measures for industries and local bodies.

Although the Act does not mention Lead as such, however it is indirectly addressed as a pollutant within the broader category of hazardous substances that contaminate water. The industries using or discharging Lead are required to treat their effluents to meet prescribed standards before releasing them into water bodies. The emission standard for Lead in effluent is issued under the Environment (Protection) Act. Schedule VI sets standards for effluent discharge: the maximum allowable Lead concentration in industrial wastewater is 0.1 mg/L for inland surface waters, 1.0 mg/L for public sewers, and 2.0 mg/L for Marine coastal areas.[18]

2.9 The Air (Prevention and Control of Pollution) Act, 1981

The Air (Prevention and Control of Pollution) Act, 1981[19] is primary law to prevent, control, and reduce air pollution in the country. Although the Air Act does not mention Lead as such, however it provides the legal framework under which Lead emissions are controlled from various sources.

This Act is implemented through CPCB & SPCBs and emission standards are issued under the Environment (Protection) Act, 1986, which works in tandem with the Air Act. CPCB has set the specific emission limits of ≤ 10 mg/Nm^3 for Lead-emitting industries, such as Primary and secondary Lead smelters, Battery manufacturing units, Foundries, pigment, and paint industries etc. The Act has banned the use of leaded petrol to check the atmospheric concentration of Lead.

2.10 The Environment (Protection) Act, 1986

The Act was enacted in 1986 to protect and improve the environment. The Act was last amended in 1991.[20, 21] Environmental (Protection) Rules, 1986 under this Act provide detailed procedures and standards for implementing the provisions. These Rules empower the Central Government to set the standards of quality of environmental matrices for various areas & purposes, maximum allowable limits of concentration of various environmental pollutants and enforce them to regulate industrial emissions and discharges, to protect human health and the environment.

The Rules prescribe permissible limits for Lead concentrations in various environmental media. Schedule VI sets standards for effluent discharge: the maximum allowable Lead concentration in industrial wastewater is 0.1 mg/L for inland surface waters, 1.0 mg/L for public sewers, and 2.0 mg/L for Marine coastal areas.[22] Similarly, the Rules set emission limits for Lead in industrial air pollutants, particularly for processes such as metal smelting, battery manufacturing, and foundries which are governed by respective Acts (discussed in sections below).

2.11 The Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989[23]

The rules were notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC) under the Environment (Protection) Act, 1986. Its enforcement, inspections, and approval of safety reports come under the purview of CPCB and SPCBs. It is designed for the safe handling, storage, and import of hazardous chemicals with aim to prevent and minimise major accidents involving hazardous chemicals. The rules have clearly defined the hazardous chemicals, major industrial accidents and establishing responsibilities for regulatory authorities.

While elemental Lead is not clearly named in Schedule 1, several Lead compounds are included as hazardous chemicals because of their high toxicity and potential for environmental contamination.

Examples of listed Lead compounds under Schedule 1 include:

- Lead alkyls (such as tetraethyl Lead, tetramethyl Lead) – extremely toxic and flammable
- Lead compounds, inorganic (e.g., Lead oxide, Lead nitrate, Lead chromate)

So, the MSIHC Rules, 1989 guide industries handling these Lead compounds to ensure that facilities maintain safety data, risk assessments, and emergency plans, and promptly report any Lead-related accidents to timely protect both workers and the surrounding environment.

Provision	Requirement	Relevance to Lead
Rule 4 – Duties of the Occupier	Any person handling hazardous chemicals must identify hazards, take preventive measures, and prepare on-site emergency plans.	Industries manufacturing or storing Lead compounds must have safety management systems.
Rule 5 – Notification of Major Accidents	Mandatory reporting of any accident involving Lead or its compounds causing injury, death, or contamination.	Ensures accountability and data collection for Lead-related incidents.
Rule 10 – Import of Hazardous Chemicals	Importers must furnish information on the chemical's hazards, storage, and safety precautions to the authorities.	Applies to importers of Lead compounds or Lead alkyls used in fuel additives or manufacturing.
Rule 13 – Safety Reports and Audits	Units handling hazardous chemicals beyond threshold limits must submit a detailed safety report to the SPCB or competent authority.	Required for large Lead smelting, pigment, or alloy manufacturing units.
Schedule 5 – Safety Data Sheets (SDS)	Industries must maintain and display information on toxicity, handling, and emergency measures.	SDS must specify Lead's toxic effects and exposure prevention.
Schedule 7 – Emergency Planning	Industries must prepare on-site and off-site emergency plans.	Ensures preparedness for Lead contamination or release incidents.

2.12 The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016[24]

India has Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 under the Environment (Protection) Act, 1986 to safely manage the hazardous waste in the country. In 2016 to align India's waste management system with the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, the MoEF&CC has notified the "Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016."

The rule governs the safe handling, treatment, and disposal of hazardous waste in India, while also regulating its import and export. The rule describes the responsibilities of the occupier for management of hazardous and other wastes by promoting reduction, reuse, recycling, and recovery of hazardous waste while ensuring environmentally sound handling and disposal. The rule also establishes procedures for transboundary movement with prior informed consent from importing countries.

The MoEF&CC is the nodal ministry for policy, import/export authorisation, and Basel compliance while PCB & SPCBs are responsible for issuing registration and technical guidelines and monitoring compliance.

The rules are applicable to all industries involved in generating, collecting, storing, transporting, treating, or disposing of Lead-based wastes, such as Lead-acid battery recyclers, smelters, metal finishing, pigment manufacturing, and electronic waste handlers.

Schedule I of the rules enlists the process that generate hazardous waste; it includes primary & secondary production of Lead. While Schedule II enlists the maximum allowable concentration of chemicals in hazardous wastes. According to this schedule, Lead concentration should not be more than 5.0 mg/L (or ppm). Schedule III of the rules enlists the type of hazardous wastes for which "Prior Informed Consent" will be needed for import and export in alignment with Annexure VIII of the Basel Convention. This subsection includes waste having Lead &/or Lead compounds as constituents or contaminants.

2.13 The E-Waste (Management) Rules, 2022

The E-Waste (Management) Rules, 2022[25], provides a comprehensive framework for environmentally sound management of electronic waste generated from electrical and electronic equipment (EEE) and to reduce hazardous substances, including Lead, in electronics. It was notified by the MoEF&CC under the Environment (Protection) Act, 1986.

The rules also strengthened Restriction of Hazardous Substances (RoHS) provisions, defining the roles of all stakeholders, proper recycling, and banned import of e-waste for disposal. Extended Producer Responsibility (EPR) is one of the key components of this rule.

These rules shall apply to every manufacturer, producer, refurbisher, dismantler, and recycler involved in the manufacturing, sale, transfer, purchase, refurbishing, dismantling, recycling and processing of e-waste or electrical and electronic equipment listed in Schedule I.

The CPCB is the nodal agency for monitoring EPR compliance and maintaining an online portal, while the SPCBs oversee authorisation, record-keeping, and recycling operations.

Lead is commonly found in e-waste such as printed circuit boards, batteries, solder, glass of CRTs, monitors, cables, and other electronic components.

This rule restricts the use of Lead in manufacturing of EEE. It also ensures that Lead containing electronic waste should be processed only in authorised facilities and covered under EPR.

Key provisions

Provision	Relevance to Lead
Rule 4 – Reduction of Hazardous Substances (RoHS)	Restricts use of Lead beyond 0.1% in new EEE.
Rule 5 – EPR Implementation	Ensures producers collect and recycle e-waste containing Lead.
Rule 12 – Authorisation of Recyclers	Only registered recyclers with pollution control systems can process Lead-bearing e-waste.
Rule 18 – Environmental Compensation	Penalties for non-compliance with EPR targets or RoHS limits.

2.14 Batteries Waste Management Rules, 2022[26]

The Battery Waste Management (BWM) Rules, 2022 were notified by the MoEF&CC under the Environment (Protection) Act, 1986, replacing the earlier Batteries (Management and Handling) Rules, 2001.

The rule is applicable to all stakeholder such as CPCB, SPCBs, producer, dealer, consumer, entities involved in collection, segregation, transportation, refurbishment and recycling of all types of batteries regardless of chemistry, shape, volume, weight, material composition and use. The rule also emphasises EPR to ensure safe collection, recycling, and recovery.

All batteries need to carry a label indicating the symbol of heavy metals it contains, recycling symbol, and producer details. Lead acid battery is one of the wastes covered under this rule.

Figure I: Crossed out wheeled bin symbol

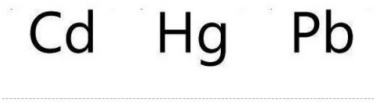


Figure II: Heavy metal symbol

Screening & response levels of lead in different location as per CPCB guidelines

Hazardous Waste (levels Schedule II, HW Rules, 2008)	Soil (Screening & Response Levels)				
	Response Levels (Dutch Intervention levels)	Screening levels (Soil quality guidelines for the protection of Environment & Human health)			
		Agricultural	Residential/parkland	Commercial	Industrial
mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)
5000	530	70	140	260	600

As per the rule, disposal of waste batteries in landfills or by incineration is strictly prohibited. It authorised only registered recyclers to handle and recycle Lead-bearing batteries. Lead-bearing residues, slag, or dross must be disposed of at authorised TSDFs to prevent Lead leakage into soil and groundwater.

2.15 The Environment Protection (Management of Contaminated Sites) Rules, 2025

The MoEF&CC has notified "The Environment Protection (Management of Contaminated Sites) Rules, 2025" under the Environment (Protection) Act, 1986 in August 2025. It is introduced to systematically manage sites polluted by hazardous substances and aim to address the risks posed by toxic and hazardous substances to human health and the environment.

The Rules set out procedures for site investigation, categorisation based on contamination severity, preparation of remediation plans, and post-clean-up monitoring.

Lead contamination is specifically addressed across all environmental matrices i.e., soil, groundwater, and surface water. They prescribe acceptable concentration limits for Lead in different land-use categories - residential, industrial, or agricultural and mandate remediation measures such as soil excavation, stabilisation, or phytoremediation to reduce Lead levels to safe standards. Continuous monitoring and reporting are also required to ensure long-term control.

03 →

Annex

3.1 Annex- I: Limits for Lead (Pb) in food commodities under the Food Safety and Standards Authority of India (FSSAI) regulations,

Article of food	Parts per Million by weight
Concentrated soft drinks (but not including concentrates used in the manufacture of soft drinks)	0.5
Fruit and vegetable juice (including tomato juice, but not including lime juice and lemon juice)	1.0
Concentrates used in the manufacture of soft drinks, lime juice and lemon juice	2.0
Baking powder	10
Edible oils and fats	0.5
Infant Milk substitute and Infant foods	0.2
Turmeric whole and powder	10.0
Anhydrous dextrose and dextrose monohydrate, edible oils & fats, refined white sugar (sulphated ash content not exceeding 0.03 per cent)	0.5
Ice-cream, iced lollies and similar frozen confections 1.0 Canned fish, canned meats, edible gelatin, meat extracts and hydrolysed protein, dried or dehydrated vegetables (other than onions)	5.0
All types of sugar, sugar syrup, invert sugar and direct consumption coloured sugars with sulphated ash content exceeding 1.0 per cent	5.0
Raw sugars except those sold for direct consumption or used for manufacturing purpose other than the manufacture of refined sugar.	5.0
Edible molasses, caramel liquid and solid glucose and starch conversion products with a sulphated ash content exceeding 1.0 per cent	5.0
Cocoa powder on the dry fat free substance	5.0
Yeast and yeast products on the dry Matter	5.0
Tea, dehydrated onions, dried herbs and spices flavourings, alginic acid, on the dry alginates, agar, carrageen and similar products derived from seaweed matter	10.0
Liquid pectin, chemicals not otherwise specified, used as ingredients or in the preparation or processing of food	10.0
Food colouring other than caramel on the dry colouring matter	10.0
Solid pectin	50.0
Hard boiled sugar confectionery	2.0
Iron fortified common salt	2.0
Corned beef, luncheon meat, Cooked Ham, Chopped meat, Canned chicken, Canned mutton and Goat meat and other related meat products	2.5
Brewed vinegar and Synthetic vinegar	Nil
Foods not specified	2.5

3.2 Annex III Indian Visa Vis Global Regulations on Lead

Sector	India (Regulation / Standard)	Indian Limit	International Benchmark	Global Limit / Guideline	Remarks
Household & Decorative Paints	*Regulation of Lead Contents in Household and Decorative Paints Rules, 2016*	≤ **90 ppm** (dried paint film)	**US EPA / Consumer Product Safety Commission (CPSC)**; EU REACH	≤ **90 ppm** (same as India)	India matches global best practice, but enforcement is weak; >90% paints exceed the limit in studies.
Toys	*Toys (Quality Control) Order, 2020* (BIS certification mandatory)	≤ **100 ppm**	**US CPSC**; **EU Toy Safety Directive 2009/48/EC**	≤ **100 ppm** (surface coating); ≤ **90 ppm** (substrate in EU)	India largely aligns with global benchmarks. Mandatory BIS certification is positive.
Art Supplies	BIS Draft Standard (Poster Colours, 2024, under consultation)	Proposed ≤ **10 ppm**	**US ASTM D4236**; **EU REACH**	Typically ≤ **90 ppm**, some categories lower	India's proposed **10 ppm** is stricter than international norms, showing progressive intent.
Primary Lead (Industrial)	*Primary Lead (Quality Control) Order, 2025*	Must conform to **IS 27:2023**	**OECD Lead Risk Management** (battery and industrial standards vary)	Standards vary; generally <0.1% impurities allowed	Brings industrial Lead under quality control; aligns with BIS-driven standardisation.
Food & Spices	FSSAI Contaminants, Toxins & Residues Regulations	e.g., ≤**2.5 ppm in turmeric powder**	**Codex Alimentarius (FAO/WHO)**; EU food safety regulations	Typically ≤ **0.1–0.2 ppm** in most foods	Indian limits are significantly higher than Codex/EU; enforcement gaps allow adulteration.
Drinking Water	BIS IS 10500:2012 – Drinking Water Standards	≤ **0.01 mg/L** (10 □g/L)	**WHO Guideline (2011)**; **US EPA Maximum Contaminant Level Goal**	WHO: **0.01 mg/L**; US EPA MCLG: **0 □g/L**	India matches WHO guideline; US standard is stricter (zero goal). Enforcement remains weak.

Endnotes

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