LG POLYMER GAS LEAK

AN INQUIRY INTO THE APPLICATIONOF DOMESTIC & INTERNATIONAL LEGAL OBLIGATIONS REVOLVING CHEMICAL ACCIDENTS

CENTRE FOR ENVIRONMENTAL LAW, EDUCATION, RESEARCH AND ADVOCACY

NATIONAL LAW SCHOOL OF INDIA UNIVERSITY
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Waste" granted to CEERA, NLSIU by the Ministry of Environment, Forest and Climate Change(MoEF&CC), Government of India.

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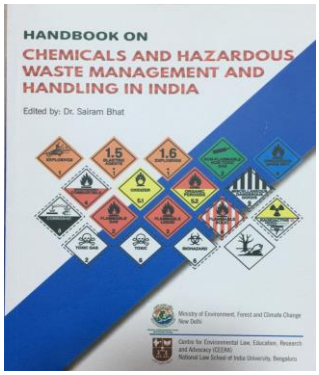

Snippet of Our Previous Publication on Chemical & Hazardous Waste Management

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LG POLYMER GAS LEAK: AN INQUIRY INTO THE APPLICATION OF DOMESTIC & INTERNATIONAL LEGAL OBLIGATIONS REVOLVING CHEMICAL ACCIDENTS

Industrialisation plays an essential role in the development of any country. It is a proven fact that a country with strong industrial sector have shown more economic growth, had improved national income and promoted living standard of people. However, it is pertinent to note that these industries thrive and majorly rely on various chemicals for their production and manufacturing process. And in handling of these chemicals, a few of those that are characterised as hazardous owing to their physical properties, accidents are a possibility. While accidents are undesirable and yet occur, the reparation for actions caused on account of the usage of chemicals in the Industrial Process cannot be avoided on the basis of *no-fault principle*.[1]

1.1 VISAKHAPATANAM LG POLYMERS GAS LEAK ACCIDENT

In the wee hours of the morning of 7thMay, 2020 leakage of toxic styrene gas from the plant of LG Polymers India Private Limited at R.R. Venkatapuram in Vishakhapatnam, Andhra Pradesh left hundreds of locals hospitalised and claimed several lives. The leakage occurred in the midst of the nationwide lockdown imposed in the wake of the global corona virus pandemic when the plant was re-starting operations after lockdown restrictions were eased. Styrene monomer, an organic compound is a basic building block of the plastics industry. A preliminary finding of the Andhra Pradesh Factories Department reflected that the chemical which is normally in the liquid state and is safe below a temperature of 20 degrees Celsius converted into vapors due to the malfunctioning of the refrigeration unit attached to the styrene tanks at the plant, causing pipes to burst resulting in the consequent leakage from the plant.[2]

Styrene, a synthetic chemical, also known as vinyl benzene, ethenybenzene, cinnamene, or phenyl ethylene ranges between colour less to dark coloured flammable liquid with a sweet smell that evaporates easily into a flammable vapour that is heavier than air. The chemical can be polymerized and if polymerization takes place inside a closed container, the container may rupture violently. The chemical is used in large quantities worldwide to produce rubber, plastic, insulation,

[1] Copyright CEERA, NLSIU 2020. Authors of this report are Prof. [Dr.] Sairam Bhat, Ms. Madhubanti Sadhya, Mr. Rohith Kamath and Ms. Geethanjali K V.

[2] Harshit Sabarwal, 'Over 60% of styrene vapour leak from Vizag plant polymerised: Report' *Hindustan Times* (Andhra Pradesh, 8 May 2020) <https://www.hindustantimes.com/andhra-pradesh/over-60-of-styrene-vapour-leak-from-vizag-plant-polymerised-report/story-mqtiEUDuVjoW8yzuSPBtDK.html> accessed 18 May 2020

fiberglass, pipes, automobile parts, food containers, and carpet backing.[3] In so far as the effect of styrene on humans and the environment is concerned, it is a fairly toxic chemical and effects can be felt after short term (acute) or long term (chronic) exposure. While styrene may enter the human body through inhalation, skin absorption, ingestion, skin and/or eye contact its primary route of entry is through the respiratory tract.[4] The health effects of the chemical include irritation of the skin, eyes, and the upper respiratory tract. Short term exposure may result in redness of the eye and skin, gastrointestinal effects, nausea, vomiting and long term exposure may result in skin blistering and development of dermatitis, affect the central nervous system showing symptoms such as depression, headache, fatigue, lassitude (weakness, exhaustion), dizziness, confusion, malaise (vague feeling of discomfort), drowsiness, unsteady gait and may cause minor effects on kidney function and possible liver injury.[5] The hazard statement of the Globally Harmonized System of Classification and Labelling of Chemicals classifies styrene as a chemical that is suspected of damaging fertility or the unborn child and is also suspected of causing cancer. Female workers with long term exposure to the chemical have reported decreased frequency of births and increased frequency of spontaneous abortions.[6]Some epidemiologic studies on workers exposed to found increased mortality or incidences leukemia or lymphoma along with suggestive evidence for pancreatic and esophageal tumors.[7] In 2018, an impartial working group appointed by the International Agency for Research on Cancer (IARC) and working with the support of WHO upgraded styrene from possibly carcinogenic to probably carcinogenic for humans on the basis of register-based studies.[8] The Globally Harmonized System of Classification and Labelling of Chemicals and the International Chemical Safety Cards, a joint initiative of the International Labour Organization (ILO) and the World Health Organization (WHO), with the cooperation of

[3] 'Compound summary, Styrene' (National Center for Biotechnology Information) <https://pubchem.ncbi.nlm.nih.gov/compound/Styrene> accessed 18 May 2020

[4] Eula Bingham, Barbara Cohrssen, C.H. Powell, *Patty's Toxicology*, vol 19 (5th edn, John Wiley & Sons2001) V4 313

[5] 'Hazard recognition of Styrene' (Occupational Safety and Health Administration, United States Department of Labour) <https://www.osha.gov/SLTC/styrene/hazards.html> accessed 18 May 2020; 'Styrene' (The National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention) <https://www.cdc.gov/niosh/npg/npgd0571.html> accessed 18 May 2020

[6] 'Health Assessment Document: Styrene' (U. S. Environmental Protection Agency, 1985) 3-23

[7] 'IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans' (World Health Organization, International Agency for Research on Cancer) <http://monographs.iarc.fr/ENG/Classification/index.php> accessed 18 May 2020

[8] 'After 40 years in limbo: Styrene is probably carcinogenic' (Science Daily, 30 May 2018) <https://www.sciencedaily.com/releases/2018/05/180530113105.htm> accessed 18 May 2020

the European Commission that provides safety and health information on chemicals, reports the chemical to be toxic to aquatic organisms and strongly advices against the entry of the chemical into the environment, especially the disposal of the chemical into drains, surface and ground waste.[9] Therefore, it is fairly certain that the chemical adversely affects both human and animal life. Styrene also features in the list of hazardous and toxic chemicals under the Manufacture Storage and Import of Hazardous Chemical Rules, 1989[10] and under the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.[11]

The styrene gas leak at LG Polymers and its lethal impact on the local populace around the plant has forced the country to draw similarities with the Bhopal Gas Leak Disaster that rattled the nation in 1984 and question the efficacy and implementation of the laws in place that should either avert or minimize the repercussions of such chemical accidents. A five member expert committee comprising of Special Chief Secretary, Environment and Forest, Special Chief Secretary Industries, Commissioner of Police- Visakhapatnam, Member-Secretary, AP State Pollution Control Board and the District Collector has been constituted by the Chief Minister to inquire into the incident and verify whether all safety protocols had been adhered to by the company and to recommend actions to be taken if the company is found to be negligent.[12] The company as it stands today was established in 1961 as "Hindustan Polymers" for manufacturing polystyrene and its co-polymers. In 1978, the company merged with Mc Dowell and Company Ltd. of United Breweries Group and in 1997, the company was taken over by South Korean petrochemicals giant LG Chem Ltd. and rechristened LG Polymers India Private Limited.[13] The company presently engages in the production of general purpose polystyrene, high impact polystyrene, coloured polystyrene, expandable polystyrene and engineering plastic compounds,[14] for all of which styrene is used as a raw material.

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[9] 'Styrene' <https://www.ilo.org/dyn/icsc/showcard.display?p_lang=en&p_card_id=0073&p_version=2> accessed 18 May 2020

[10] Manufacture Storage and Import of Hazardous Chemical Rules 1989 Schedule I Part II Entry 583

[11] Chemical Accidents (Emergency Planning, Preparedness and Response) Rules 1996 Schedule I Part II Entry 365

[12] Andhra Pradesh Bureau, 'Special committee formed to investigate into gas leak incident' *The Hindu* (Visakhapatnam, 7 May 2020) <https://www.thehindu.com/news/cities/Visakhapatnam/visakhapatnam-lg-polimers-chemical-plant-gas-leak-updates-may-7-2020/article31523178.ece> accessed 18 May 2020; Harshit Sabarwal, 'Over 60% of styrene vapour leak from Vizag plant polymerised: Report' Hindustan Times (Andhra Pradesh, 8 May 2020) <https://www.hindustantimes.com/andhra-pradesh/over-60-of-styrene-vapour-leak-from-vizag-plant-polymerised-report/story-mqtiEUDuVjoW8yzuSPBtDK.html> accessed 18 May 2020

[13] 'About LGPI',(LG Polymers India Pvt. Ltd) <http://www.lgpi.co.in/AboutLGPI.html> accessed 18 May 2020

[14] 'Products' (LG Polymers India Pvt. Ltd) <http://www.lgpi.co.in/Products.html> accessed 18 May 2020

1.1.1 Environmental Clearances for the operation of the company

News reports released in the wake of the gas leak at LG Polymers reflected that as per the documents submitted to the Andhra Pradesh Environment Impact Assessment Authority the company had admitted that as of May 10, 2019 it did not have valid environmental clearance from the concerned authorities to continue operations.[15] In India industries setting up new projects or activities or expanding or modernizing existing projects or activities that entails capacity addition or change in process and or technology can commence work only after prior environmental clearance has been sought from the Ministry of Environment Forest and Climate Change, Government of India or, the State Level Environment Impact Assessment Authority as the case may be. This is line with the Environment Impact Notification issued by the Central Government on 14th September, 2016[16] in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986, read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986. Environmental Clearance for any project is granted after the completion of a four-step process. The process involves:

- '*screening*' or an assessment to determine whether or not the project or activity requires further environmental studies for preparation of an EIA depending up on the nature and location specificity of the project;
- '*scoping*', where the Central Level Expert Appraisal Committee or State Level Expert Appraisal Committee determines comprehensive Terms of Reference (TOR) addressing all relevant environmental concerns for the preparation of an Environment Impact Assessment (EIA) Report and conveys the same to the applicant;
- '*public consultation*' where local affected persons who have plausible stake in the environmental impacts of the project or activity with special reference to material concerns in the project or activity design are invited to voice their concerns; and

[15] Ashish Aryan and Pranav Mukul, 'Vizag gas leak: Don't have green nod, company told state last May' *The Indian Express* (New Delhi, 8 May 2020) <https://indianexpress.com/article/india/vizag-gas-leak-lg-polymers-india-green-nod-6399440/> accessed 18 May 2020

[16] 'Vide Notification S.O. 1533' (Ministry of Environment and Forests) <http://parivesh.nic.in/writereaddata/ENV/EnvironmentalClearance-General/18.pdf> accessed 18 May 2020

- '*appraisal*' where a detailed scrutiny of the application, final EIA report and outcome of the public consultations is done by the Expert Appraisal Committee or State Level Expert Appraisal Committee.[17]

The applicability of all the aforementioned stages would depend upon the 'category' of the project since all projects are not required to go through all stages for the grant of an environmental clearance. The Schedule appended to EIA notification categorizes projects or activities requiring prior environmental clearance under four categories - A, B, B1 and B2 based on the spatial extent of potential impact of the project on human health, natural and man-made resources.[18] Industries engaged in activities that involve the use of hazardous chemicals such as synthetic organic chemicals, petrochemicals, chemical fertilizers all fall under category A require prior environmental clearance from the Central Government in the Ministry of Environment Forests and Climate Change on the recommendations of an Expert Appraisal Committee (EAC) at the Central level before commencing operations including expansion and modernization of existing projects or activities and change in product mix.

In March 2016, the Ministry of Environment, Forest and Climate Change on the recommendations of the Central Pollution Control Board came up with a new categorization of industries based on their propensity to pollute the environment. The categorization of industrial sectors is based on the Pollution Index (PI) which is calculated on the basis of emissions (air pollutants), effluents (water pollutants), hazardous wastes generated, consumption of resources and raw materials used and the manufacturing process adopted which in turn determines the pollutants expected to be generated. The Range of Pollution Index of any industrial sector is a number between 0 to 100 and industrial sectors with a PI score of 60 and above are put under the Red Category, those with a score of 41 to 59 are put under the Orange category; those with a score of 21 to 40 are put under the Green category and lastly, White category industries are those with a score of 0 to 20.[19] All chemical industries are put under the Red Category, and require 'Consent to Operate' from the State

[17]EIA Notification dated 14 September 2006 Clause 7
[18]EIA Notification dates 14 September 2006 Clause 4
[19] 'Environment Ministry releases new categorisation of industries' (Press Information Bureau, Government of India, Ministry of Environment, Forest and Climate Change, 5 March 2016) <https://pib.gov.in/newsite/printrelease.aspx?relid=137373> accessed 18 May 2020

Pollution Control Boards. LG Polymers falls under Category A of the EIA Notification and under the Red Category of industries as per the Range of Pollution Index.

Information retrieved from the Parivesh –a single window integrated online portal of the Ministry of Environment Forest and Climate Change, for environmental and other clearances under the Ministry reflects that LG Polymers had applied for environmental clearance in January, 2018[20]for expanding the manufacturing capacity from of polystyrene and expandable polystyrene from 415 TPD to 655 TPD in the existing area of 213 acres of the plant which had the potential of increasing employability of 300 more workers and would require additional production block, utilities and enhancement of treatment system.[21] The company had valid consent for operation till December, 2021 from the Andhra Pradesh Pollution Control Board.[22] The environmental clearance Form submitted by the company for enhanced production also revealed that hazardous chemicals shall be used for manufacturing of Polystyrene and Expandable Polystyrene but Manufacture Storage and Import of Hazardous Chemical Rules, 1989 shall be followed during storage, transportation and handling of raw materials and the hazardous chemicals and solvent shall be stored and handled in closed systems and that the project shall not have any significant impact on vulnerable groups of people such as patients, children, the elderly etc. In so far as risks of accidents during construction or operation of the Project from explosions, spillages, fires etc. from storage, handling, use or production of hazardous substances was concerned the company filed that all inbuilt safety precautions will be adopted and there will not be any damage to environment or human health.[23]

Subsequently, the company withdrew the proposal by writing to the Member Secretary, Ministry of Environment Forest and Climate Change citing change in water balance and typographical

[20] Proposal No. IA/AP/IND2/72017/2018, File No: IA-J-11011/7/2018-IA-II(I) and Proposal Name: LG Polymers India Pvt. Ltd.

[21] 'Proposal of expansion of manufacturing capacity from 415 TPD to 655 TPD within the existing site area located at Sy. Nos. 29 to 45, 83/1 and 83/3, RR Venkatapuram Village, Pendurti Mandal, Visakhapatnam District, Andhra Pradesh by M/s. LG Polymers India Pvt. Ltd.' <http://environmentclearance.nic.in/DownloadPfdFile.aspx?FileName=QMZNbUh03FAY75UtAajRtmbl7M5SL3pzlyQ8GnG+Yz7tuPHpelYGfduk/q6WtEO8Plr36U6RQsagyxma2R9/ERlTnX7HLH7SBzwoBkM1690FvIoCBDSmHD8ojJZDvDZ4yKIvLdjkNUMSPjG7UIjAag==&FilePath=93ZZBm8LWEXfg+HAlQix2fE2t8z/pgnoBhDlYdZCxzXmG8GlihX6H9UP1HygCn3pCkAF2zPFXFQNqA4krKa1Aw==> accessed 18 May 2020

[22] Vides order no. APPCB/VSP/VSP/14082/HO/CFO/2017 dated 19.01.2017 valid till 31.12.2021.

[23] 'Appendix 1' <http://environmentclearance.nic.in/auth/FORM_A_PDF.aspx?cat_id=IA/AP/IND2/72017/2018&pid=Found> accessed 18 May 2020

errors in the application as the reasons for withdrawal. [24] The application for withdrawal was accepted by the Ministry in May 2018. A fresh proposal with the same requirements was made by the company on the very day the withdrawal letter for the first proposal was filed, 3 January, 2018.[25] But in April, 2018 the second proposal was also withdrawn with no reasons for withdrawal cited.[26] The project with both proposals was delisted from the portal in November, 2019 with the reason that the "PP is not interested to continue the project".[27]If one were to solely consider the EIA applications filed by the company, the withdrawal letters and the delisting of the project from the Ministry's website, one can infer that the company was functioning without environmental clearances from the Union Ministry.

The Human Rights Forum (HRF) has sought criminal prosecution of the LG Polymers factory management along with the officers of the government bodies. It has been revealed that the management of the factory had stated in an affidavit in 2019 that despite expanding the production of the plant they have not obtained the required environmental clearance as per the EIA notification 2006. Through a careful examination of the disaster it is still unclear that the incident was a result of the lack of an environmental clearance, the company however has stated that the affidavit was not an admission of violation of procedure or the law but merely a promise to comply with them in the future, which makes it clear that the company may not have had all the legal clearances in place for its operations.[28]

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[24] 'TOR Application file withdrawal from MOEF&CC, New Delhi of LG Polymers India Pvt. Ltd.' <http://environmentclearance.nic.in/DownloadPfdFile.aspx?FileName=x5AJkbtIuYmB9WFjcFp+ZoUHrmdAaLSoG+/L2WIgiyMUHzI0QscrZPwl47nEL00PaOiW99QBG8A6W1gflbm20FnprsuIX8ROsBf8t82RSl3CnfPUm9hJNCp6nHQcyXNiS+R3LrTRqFLO2YUD3Az8fwe4Psv/DmP1qttE50Me5Zo=&FilePath=93ZZBm8LWEXfg+HAlQix2fE2t8z/pgnoBhDlYdZCxzXmG8GlihX6H9UP1HygCn3pv1ma6ukaaKwTEwue+Z8DhY0JVUyjJHD+10nj4NsGFZc=> accessed 18 May 2020

[25] Proposal No: IA/AP/IND2/72021/2018, FileNo: IA-J-11011/8/2018-IA-II(I), ProposalName: LG Polymers India Pvt. Ltd.

[26] 'TOR Application file withdrawal from MOEF&CC, New Delhi of LG Polymers India Pvt. Ltd.' http://environmentclearance.nic.in/DownloadPfdFile.aspx?FileName=v6WqMFVefhXWjL/GInjjpsArapbwl9nOXwKcuzRb0teDmcsaRB/XC8LYPY8I6lFtoS5z65Ew2QR+HMAeTS+chGQzYJFGTXknPN3B01U0Dc3N/xXfAsMVCiY5PPOiVQD4rCJFgqdRKld0ATpmfvfTi1byQFPqqW2YVyihYfbJT0M=&FilePath=93ZZBm8LWEXfg+HAlQix2fE2t8z/pgnoBhDlYdZCxzXmG8GlihX6H9UP1HygCn3pv1ma6ukaaKwTEwue+Z8DhY0JVUyjJHD+10nj4NsGFZc= accessed 18 May 2020

[27] 'Other Status Query Form' <http://environmentclearance.nic.in/Online_delete_Status.aspx> accessed 18 May 2020

[28] 'LG Polymers bound to pay 100% penalty for illegal operations', *The New Indian Express*, (May 9, 2020) <https://www.newindianexpress.com/business/2020/may/09/lg-polymers-bound-to-pay-100-penalty-for-illegal-operations-2141019.html>

1.1.2 NGTs interim fine of 50 crores and institution of committee to determine final penalty and power of NGT to impose such an order

A petition is said to have been filed on the 7th of May 2020, at the National Green Tribunal by an NGO CWEL Foundation to investigate the incident of the Vishakapatnam Gas Leak and sought constitution of a High-Level Committee, with officers not below the rank of Joint Secretary and headed by a retired Justice, to identify responsibility of the district, government authorities, company management and PCBs in the incident.[29] This petition was in addition to the First Information Report (FIR) filed against LG Chem under several provisions of the Indian Penal Code.[30] The following day, i.e. 8th May 2020, the NGT took *suo-moto* cognizance of the issue by the bench headed by Justice Adarsh Kumar Goel.[31]

On 8th May 2020, an NGT Principal Bench, headed by Justice Adarsh Kumar Goel and consisting Justice Sheo Kumar Singh and Dr. Nagin Nanda, issued an Order.[32] The Order stated that based on the media report the Tribunal would hear the matter under Sections 14[33] and 15[34] of the NGT Act, 2010. It was also stated that the incident was covered under Rule 2(e) read with Entry 583 of Schedule I of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and further the Rules provide for on-site[35] and off-site[36] Emergency Plans to ensure prevention of damage, the Order states that this Rule along with other statutory provision seemed to have been contravened. However, the Order was silent on the contravention of the exact statutory provisions. Applying the principle of 'Strict Liability' against the enterprise, the Order states that such entity is made liable to restore damage caused by such contravention of statutory provisions and the resulting accident;

[29] 'Plea in NGT seeks judicial probe into Visakhapatnam gas leak incident' *ANI* (New Delhi, 7 May 2020) <https://www.aninews.in/news/national/general-news/plea-in-ngt-seeks-judicial-probe-into-visakhapatnam-gas-leak-incident20200507144238/> accessed 11 May 2020
[30] The Indian Penal Code 1860 § 278, 284, 285, 337, 338 (IPC)
[31] 'NGT to take up Visakhapatnam gas leak case on Friday' *The Statesman* (New Delhi, 7 May 2020) <https://www.thestatesman.com/india/ngt-take-visakhapatnam-gas-leak-case-friday-1502885508.html> accessed 11 May 2020
[32] In re: Gas Leak at LG Polymers Chemical Plant in RR Venkatapuram Village Visakhapatnam in Andhra Pradesh, O.A. No. 73/2020, available at https://greentribunal.gov.in/orderpdf/orderlist.pdf accessed on 11 May 2020
[33] National Green Tribunal Act 2010 § 14 (NGT Act)
[34] Ibid § 15
[35] The Manufacture, Storage and Import of Hazardous Chemical Rule 1989 Rule 13
[36] Ibid Rule 14

the Order further held accountable the statutory authorities for their lapses in their responsibility for authorizing and regulating such activities.

To ascertain the extent of damage, extent of failure and to arrive at remedial measures, the Order issued notice to the Central Pollution Control Board (CPCB), Ministry of Environment, Forest & Climate Change (MoEF&CC) and the entity LG Polymers; further, a 6 member Committee[37], to be headed by a former A.P. High Court Judge, was sought to be constituted to come up with a report in this regard with specific direction towards the heads to the report.[38] What is interesting in this Order is an interim direction to LG Polymers India Pvt. Ltd., to deposit a sum of 50 Crore Rupees with the District Magistrate, Vishakapatnam, with regard to the prima facie extent of damage to life, public health and environment; the Order states that the said amount has been arrived at after considering the 'financial worth of the company and to the extent of the damage caused'.

Initial perusal of this Order gives the impression of a just stand taken by the NGT, however one needs to take note of the fact that the very power of the NGT to take cognizance of issue on its own is under inspection by the Supreme Court of India.[39]The second prominent aspect here is the imposition of an initial amount of 50 Crore Rupees on the entity. The imposition of such interim penalty has, in the past, always been made post perusal of the report by either the CPCB or the panel formed for the cause[40]and in line with Section 19(4)(i) of the NGT Act, 2010; but this could be the first time an initial penalty has been imposed on an entity prior of any kind of investigation or finding. The NGT bases this prima facie liability imposed on LG Polymers on a 19th century English law principle of "strict liability", whose applicability in India has been made redundant by the Supreme Court of India in 1986.[41] Instead the Order must have mentioned the principle of absolutely liability as provided for under Section 17[42] of the NGT Act, 2010 and in the letter and

[37] Para 4 of the Order above
[38] Para 5 of the Order above
[39] 'SC to decide if NGT has power to take cognizance of issues on its own' *Business Standard* (New Delhi, 12 July 2019) <https://www.business-standard.com/article/pti-stories/sc-to-decide-if-ngt-has-power-to-take-cognisance-of-issues-on-its-own-119071200971_1.html> accessed 11 May 2020
[40] 'NGT fines paper mill Rs 10 Lakh for causing pollution in Sitapur' *The Wire* (New Delhi, 9 July 2019) <https://thewire.in/environment/pollution-paper-mill-sitapur-ngt> accessed 11 May 2020; 'NGT slaps penalty of Rs 1 Crore on Grasim Industries' *The Economic Times* (New Delhi, 23 July 2019) <https://economictimes.indiatimes.com/industry/indl-goods/svs/cement/national-green-tribunal-slaps-penalty-of-rs-1-crore-on-grasim-industries/articleshow/70345452.cms?from=mdr> accessed 11 May 2020
[41]*M.C. Mehta* v. *Union of India*, 1987 AIR 965; *Union Carbide* v. *Union of India*, 1990 AIR 273
[42] NGT Act § 17 (3)

spirit of the judgments in the cases of Bhopal gas tragedy and the Oleum gas leak. Justice Bhagwati, while deciding the Oleum gas leak case, had expressly stated that the Rule of Strict Liability, having been developed in the 19th century, was redundant owing to the developments in science in technology and was unsuitable to the Indian Economy. He has also stated that law needs to evolve according to the evolution of science and technology. Thus, Justice Bhagwati evolved the absolute liability principle in furtherance to that of the strict liability laid down by the English Courts. The Rule of absolute liability states that if an enterprise engages in hazardous or inherently dangerous industry posing potential threat to the health and safety of persons working in the factory or residing in the surrounding areas owes an absolute and non-delegable duty to the community to ensure that no harm results to anyone on account of hazardous or inherently dangerous activity which it has undertaken. Further, the enterprise is to provide highest safety standards and must be absolutely liable to compensate in case of any harm caused because of such a substance regardless of due care taken by the enterprise. Therefore, absolute liability and not strict liability would be an appropriate term in the NGT Order.

LG polymers on the 9th May 2020 has admitted in a statement that the cause of incident was leaking vapor from Styrene Monomer storage tank near the General-Purpose Poly Styrene factory and suggests that maintenance failures, operating errors and improper storage of the toxic styrene gas may have led to the tragedy.[43]

Complying with the NGT order to pay interim fine of 50 crore rupees the LG Polymers had approached the Supreme Court of India. In the petition it was stated that a total of seven committees have been formed following the chemical disaster earlier in May 2020. The committees have been formed by High Court of Andhra Pradesh, NGT, Ministry of Environment and Forests (MoEF), Central Government etc. and this multiplicity of committees probing a single issue was the contention of the corporation. The Supreme Court after hearing the counsels observes that the High Court of Andhra Pradesh was the first to venture to form a committee and that the same may be informed to the NGT during its hearing on June 1, 2020.[44] In another case filed by LG Polymers

[43]Utpal Bhaskar, 'LG Polymers admits leaking vapor from gas storage tank caused Vizag tragedy' *Livemint* (New Delhi, 9 May 2020) <https://www.livemint.com/news/india/lg-polymers-admits-leaking-vapor-from-gas-storage-tank-caused-vizag-tragedy-11589009346537.html> accessed 11 May 2020

[44] "SC refuses to issue notices to Centre, Pollution Control Boards after plea by LG Polymers", The New Indian Express, 19 May 2020, available at https://www.newindianexpress.com/states/andhra-pradesh/2020/may/19/sc-refuses-to-issue-notices-to-centre-pollution-control-boards-after-plea-by-lg-polymers-2145322.html

it has been alleged that the Andhra Pradesh Pollution Control Board (APPCB) and various other parties such as the officials of the Union of India, Central Pollution Control Board, Collector and District Magistrate of Visakhapatnam, have defamed the company and that they have suffered loss of reputation due to the statements made by the defendants despite the company taking measures to compensate and remedy the disaster.[45] The matter is to be heard on Tuesday i.e. 26th May 2020.[46]

1.2 RESPONSE OF THE INDIAN SUPREME COURT TO CHEMICAL ACCIDENTS

One of the most noteworthy cases and decisions in India in the field of chemical accidents was rendered by the Supreme Court in *M.C. Mehta and Another. v. UOI.*[47] Although this case was filed after the Bhopal gas Leak disaster, it laid down the principle of absolute liability. A PIL was filed before the Supreme Court with a prayer for orders against reopening of certain plants of Shriram Foods industries which was an industrial undertaking manufacturing and possessing hazardous and lethal chemicals and gases posing danger to health and life of workmen and people living in neighborhood. Reports made by expert committees appointed by Government were considered and it was found that the management had minimized possibility of hazard and risk by carrying out the recommendations made by the committees. The plant was temporarily allowed to be opened after weighing and balancing various considerations like the welfare of the people, possibility of management's negligence and indifference, unemployment in the event of a closure of the plant and the hazardous and risk inherent in the use of science and technology. The Central Pollution Control Board was directed to take action if standards and conditions were not met and further the Orders issued prohibiting operation of plant was suspended. Justice Bhagwati laid down the principle of absolute liability where in any enterprise engaged in an inherently dangerous activity would be absolutely liable to compensate all those affected by an accident. The petition was further disposed of by granting the petitioner a sum of 10,000 rupees by way of costs for the service rendered by him to the community and as a token of appreciation.

1.2.1 Bhopal Gas leak case

[45] "Vizag gas leak: LG Polymers moves SC against APPCB", The Hindu, May 19, 2020, available at https://www.thehindu.com/news/national/andhra-pradesh/vizag-gas-leak-lg-polymers-moves-supreme-court-against-andhra-pradesh-pollution-control-board/article31621030.ece
[46] Ibid
[47] M.C. Mehta and Another. v. UOI. (1986) 2 SCC 176: 1986 SCC (Cri) 122

This case pertained to the leakage of methyl isocyanate (MIC) from the premises of Union Carbide India Limited (UCIL) on the night of December 2nd, 1984, which caused the death of residents around the plant. A First Information Report was registered under Section 304A of the Indian Penal Code[48] against the company Union Carbide Corporation (UCC), Union Carbide India Limited and its executives and employees. The FIR stated that the leakage had caused death of around 3000 people and injured over 30,000 people. Based on the FIR few employees of UCIL were arrested subsequently, and this was followed by the transfer of the case to the Central Bureau of Investigation (CBI) to be investigated further.

In the meantime, the government of Madhya Pradesh set up Bhopal Poisonous Gas Leakage Inquiry Commission and directed them to assess the situation and submit a report. Simultaneously, over 100 cases were filed, on behalf of the victims, in different courts in the US and were subsequently consolidated and brought before the Southern District Court, New York. In 1985 the Indian Parliament enacted the Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985, which recognized the Union of India (UOI) as the sole plaintiff against UCC for all cases pertaining to compensation to be claimed following the said disaster.[49] Post this the UOI, on behalf of all victims, filed a complaint at the above-mentioned Court in New York. Meanwhile the commission set up to submit a detailed report found that UCC was at fault for faulty design of the plant including that of poor safety measures.

The New York District Court in 1986, dismissed the claims of UOI owing to jurisdictional issue and further holding that Indian courts had primary jurisdiction. Back in India the validity of Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985 was challenged at the Supreme Court of India.[50] The District Court at Bhopal received a suit by UOI suing UCC.

In 1987, the UOI preferred an appeal to the Court of Appeals to the Second Circuit from the 1986 dismissal order of the New York District Court. Upon disposal from there, the UOI further appealed to the US Supreme Court claiming for a writ of certiorari, but the suit was declined. In the same year, the CBI filed charge sheet, at Chief Judicial Magistrate court at Bhopal, based on

[48] IPC, § 304 A
[49] The Bhopal Gas Leak Disaster (Processing of Claims) Act 1985 § 3(1)
[50] *Rakesh Shrouti* v. *UOI* W.P. No. 164 of 1986; *Nasrin Bi and ors* v. *UOI* W.P. No. 1551 of 1986

the FIR registered earlier. Concurrently the Bhopal District Court ordered an interim compensation of Rs 350 crore.

In 1988 the compensation awarded by the Bhopal District Court was challenged at the High Court of Madhya Pradesh where the interim compensation was reduced to Rs 250 crore. The High Court order was challenged before the Supreme Court of India wherein it was held that a compensation of $470 million was to be paid by both UCC and UCIL towards a full and final settlement of all claims and went on to quash criminal cases against the accused.[51] This amount was to be deposited with the Reserve Bank of India (RBI) under the identity of the Registrar of the Supreme Court of India[52] and further authorized a Welfare Commissioner, appointed for the purpose of distribution of the settlement funds, to sanction withdrawals of the same.

The Supreme Court of India in 1989 began to review the settlement owing to protests for quashing criminal cases against the accused. In the meantime the Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985 was upheld by applying the doctrine of *parens patriae*.[53] In 1991 the Supreme Court of India declined to reopen or revisit the settlement arrived at in 1988 citing Article 142 of the Indian Constitution,[54] and it further directed UCC to construct a hospital for the victims of gas leak at Bhopal and to contribute 50 crore rupees for the same.[55]

Subsequently, in 1992, the Chief Judicial Magistrate directed the accused to appear before it. The court also ordered to attach UCC's shares in UCIL in case of failure to appear before it.[56]In the same year, the Government of India announced a scheme of interim relief whereby rupees 200 was to be distributed to 5 lakh victims in a span of 3 years. Concurrently, the Supreme Court ruled in of the connected cases that interim relief must be paid to those victims as well who were likely to be excluded from the scheme announced the Government that year.[57]

In 1994 the shares of UCC in UCIL were sold as per the orders of the Bhopal Magistrate Court in 1992. The sale proceeds of 120 crore rupees out of 170 crore rupees was released to the Bhopal

[51] *Union Carbide Corporation v. Union of India* (1989) 1 SCC 674
[52] *Ibid*
[53] Meaning, an authority can act on behalf of its citizens to protect their legal rights in the event of the said authority being unable to declare or decide upon those rights, *CharanLalSahu* v. *UOI* (1990) 1 SCC 613
[54] This allows a court to go beyond the plea in a petition so as to do "complete justice"
[55] *UCC* v. *UOI* (1991) 4 SCC 584
[56] The Code of Criminal Procedure 1973 § 82
[57] *Bhopal Gas Peedit Mahila Udyog Sangathan* v. *UOI* AIR 1989 SC 1069; *UCC* v. *UOI*, 1993 Supp (4) SCC 481

Hospital Trust. Krishna Mohan Shukla, a Supreme Court advocate filed a PIL in 1995 to right the many irregularities and partial treatment at the welfare commissioner's office,[58] the SC while deciding this case provided for revision of order by the Deputy Welfare Commissioner regarding classification of claimants and thereby making it mandatory for the Welfare Commissioner to approve any further revision. The court further allowed aggrieved claimants to appeal against an aggrieved order of such Lok Adalat.

The New York District Court, in 2000, dismissed a class action suit filed by some of the victims in 1999; it stated that 1989 SC judgment. Upon appeal the New York District Court was directed to consider the claims on the condition that the Indian Government and that of Madhya Pradesh had no objection. The Government of India submitted their no objection before New York District Court regarding the decontamination assumed by UCC. Although the Magistrate Court in Bhopal convicted the offenders, they subsequently were let off negligible retribution. A curative petition was filed in the Supreme Court of India in 2010 recalling the order issued by it in September 1996, however, this petition was dismissed. In 2011, another curative petition was filed before the Supreme Court of India seeking additional compensation of 7413 crore rupees; followed by yet another curative petition being filed before the Supreme Court in February 2020 to be heard on a regular basis.

1.3 LAWS APPLICABLE FOR THE STORAGE OF HAZARDOUS CHEMICALS AND MANAGEMENT OF CHEMICAL ACCIDENTS IN INDIA

Chemical accidents and disasters affect living organisms, humans, livestock and plants causing death, injury, disability and disease, the abiotic environment including air, soil, water bodies and the effects of such disasters are either immediately felt or manifest over time, often transcending physical boundaries and generations. In the after aftermath of the Bhopal gas leak disaster, a number of laws were framed to regulate the handling, storage and transportation of hazardous chemicals and to mitigate the adverse effects of chemical disasters in India. Even prior to the Bhopal gas leak disaster in 1984 there were a few laws that dealt with specific chemicals and their safe management such as Explosives Act, 1884, the Petroleum Act, 1934, the Insecticide Act, 1968 that primarily made provisions for on-site safety and management of chemicals. Post 1984, the need for a legal and institutional framework for the industrial/chemical risk management and

[58]Krishna Mohan Shukla vs. Union of India (UOI) and Ors (2000) 10 SCC 507

disaster prevention was strongly felt. The period after 1984 till 2005 when the National Disaster Management Act was enacted, witnessed promulgation of several laws, especially the Environment (Protection) Act, 1986 and Rules framed in furtherance of the powers granted to the Central Government under it, that focused on protection of the environment from chemical accidents and disaster, prevention of such accidents, adopting emergency strategies to handle such accidents, if and when they occur and mitigating the harmful impact that may result from such accidents. Post 2005, with the enactment of the National Disaster Management Act, the focus was on the holistic management of disasters with the involvement of multiple stakeholders. Some of the notable legislations framed in India for storage and handling of chemicals and chemical disaster management have been discussed hereunder:

1.3.1 Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 –

This was one of the first rules on hazardous chemicals to be formulated in India in exercise of the powers conferred on the Central Government under Section under Section 6, 8 and 25 of the Environment (Protection) Act, 1986. These Rules have been subsequently amended in 1994 and 2000.[59] The Rules apply to hazardous chemicals defined under Rule 2(e) which includes any chemical that satisfies any of the criteria laid down in the Schedules appended to the Rules. Occupiers of different sites where industrial activity is carried out, come within the purview of these Rules and have been given several responsibilities to ensure the safe handling and management of chemicals. The applicability of these Rules on industrial activity and consequently on the occupiers of industrial activity depends on the type of hazardous chemicals they deal with, their threshold quantity and other criteria and particulars laid down in the Schedules.

- **Identification of major accident hazards:** With a view to ensure safe storage and handling of hazardous chemicals and to avert accidents, the occupier must provide evidence to show that he has identified major accident hazards and has taken adequate steps to prevent such accidents and to limit their impact on people and the environment. The Rules also makes the occupier responsible for the safety of persons working on the site

[59] The principal Rules were published in the Gazette of India vide number S.O. 966(E), dated 27.11.1989 and subsequently amended vide: S.O.115 (E), dated 05.02.1990; GSR 584, dated 09.09.1990; S.O.2882, dated 03.10.1994; and S.O. 57(E), dated 19.01.2000.

who must be provided with adequate information, training and equipment including antidotes to ensure their safety on site from chemical hazards. [60]

- **Filing of safety report and safety audit report:** Before commencing any activity, the Rules requires occupiers to notify the sites before the authority concerned and the occupier has to submit a written report before the authority with all the particulars enlisted under Schedule 7 of the Rules. But owing to the magnitude of hazardous chemicals that sites handling chemicals under Schedules 2 and 3 of the Rules deal with, the Occupiers are required to file safety reports over and above the need for approval and notification to the concerned authority. Therefore, no occupier of an industrial activity and isolated storage with hazardous chemicals listed under Schedule 2 and 3 that fulfils the threshold quantity under Column 4 of shall undertake any industrial activity, unless a safety report on that industrial activity with the information specified in Schedule 8 has been prepared and a soft copy of the same has been sent to the concerned authority at least ninety days before commencing that activity.[61] Along with a safety report, the Manufacture, Storage and Import of Hazardous Chemicals (Amendment) Rules, 1994, has introduced the need for filing a safety audit report on the basis of an independent safety audit carried out by an expert, not associated with the industrial activities[62] which should be forwarded by the occupier along with the comments of the auditor to the concerned Authority within 30 days after the completion of such audit.[63] The safety audit report has to be updated by the occupier once a year by getting a fresh audit conducted by an independent auditor which also has to be submitted to the concerned authority within 30 days along with the comments of the auditor.[64] After perusing the safety audit reports, if the concerned Authority so deems fit, he may issue an improvement notice to the occupier within 45 days of the submission of the said report.[65] Once a safety audit report has been submitted to the concerned Authority by an occupier, no modification to the industrial activity must be made which materially affects the particulars of the report, unless the concerned Authority has been

[60] Manufacture Storage and Import of Hazardous Chemical Rules 1989 Rule 4(2) (Chemical Rules)
[61] Ibid, Rule 10(1)
[62] Ibid, Rule 10(4)
[63] Ibid, Rule 10(5)
[64] Ibid, Rule 10(6)
[65] Ibid, Rule 10(7)

apprised of the same and a report detailing the modifications carried out on the industrial activity has been sent to the Authority 90 days prior to the making of those modifications.[66]

- **Preparation of On-site Emergency Plan by the Occupier:** The occupier of an industrial activity dealing with hazardous chemicals that fulfil certain threshold limits[67]are required to prepare an on-site emergency plan for the sites they handle. The on-site emergency plan that details how the major accidents shall be dealt with must be updated at regular intervals. The plan must include the name of the person responsible for on-site safety and the names of persons authorized to take action in case of any emergency. [68] While preparing and keeping the emergency plan up to date the occupier shall take into account any modifications made in the industrial activity that needs to be taken note of. The occupier is also responsible for ensuring that all persons working on the site who may be affected if a chemical hazard or accident takes place is apprised of the relevant provisions of the emergency plan. [69]
- **Ensuring safety of persons off-site:** In addition to the persons on site, the occupier also has the duty of informing persons outside the site who are likely to be in an area, which may be affected by a major accident, about the nature of the major accident hazard, the safety measures to be adopted and the Do's and Don'ts which should be adopted in the event of a major accident.[70]
- **Off-Site Emergency plans by concerned authorities:** The Rules require the Authorities to develop off-site emergency plans to deal with emergencies that may arise if any major accident takes place on the site. In preparing the off-site emergency plan the Authority must consult the occupier and such other persons as it may deem necessary. Apart from information on the industrial activity, the Authority may seek information on the nature, extent and likely effects off-site of possible major accidents from the occupier.[71] In addition to the particulars and information contained in the on-site emergency plan prepared by the occupier, the off-site emergency plan must contain details on and make provisions for

[66] Ibid, Rule 11(1)
[67] Hazardous chemicals that are equal to or more than the threshold quantities enlisted under Column 3 of Schedules 2 and 3 of the Rules respectively
[68] Manufacture Storage and Import of Hazardous Chemical Rules 1989, Rule 13(1)
[69] Ibid, Rule 13(2)
[70] Ibid, Rule 15
[71] Ibid, Rule 14

facilities and transport routes, contact for further advice e.g. meteorological information, transport, temporary food and accommodation, water and agricultural authorities, special equipment including fire fighting materials, damage control and repair items, details of emergency response procedure, evacuation arrangements, and arrangements for dealing with the press and other media interests.[72]The concerned authorities made responsible under the Rules for the preparation of off-site emergency plan are Chief Inspector of Factories, Chief Inspector of Dock Safety, Chief Inspector of Mines, Atomic Energy Regulatory Board, Chief Controller of Explosives and the District Collector or District Emergency Authority.

Styrene that leaked from LG Polymers is listed as a hazardous and toxic chemical under the Manufacture Storage and Import of Hazardous Chemical Rules, 1989[73] While the Rules prescribe detailed guidelines for occupiers of industrial activity dealing with hazardous chemicals to take adequate precautions, draw up emergency plans, notify major accidents, there is no provision in the Rules to hold the occupiers responsible, if the provisions are not complied with. However, in consideration of the fact that the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 is a piece of delegated legislation formulated under the Environment (Protection) Act, 1986, the penal provisions under the Act[74] can apply in this instant occurrence. Section 15 of the Environment (Protection) Act, 1986 states that anyone who fails to comply or violates provisions of the Act or the Rules made under it will be held liable to imprisonment for a period of 5 years or fine which extends upto rupees 1 lakh. In case of continuing offences, fines up to rupees 5,000 can be levied every day and if such period exceeds 1 year then the imprisonment can be extended up to 7 years. Vicarious liability for responsible persons of a company has also been provided under this Act and every person who, at the time the offence was committed, was directly in charge of, and was responsible to, the company for the conduct of its business as well as the company shall be held liable and punished if found guilty.[75] Since the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 provides for specific exercise of duty by the occupier of

[72] Ibid, Schedule 12. Rules 13 & 14, Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 require the occupier and the concerned authority to conduct a mock drill of the on-site emergency plan every 6 months and a rehearsal of the off-site emergency plan once a year
[73] Ibid, Schedule I Part II Entry 583
[74] Environment Protection Act, 1986, Section 15
[75] Environment Protection Act, 1986, Section 16

industrial premises, failure to comply with the requirement of the Rule can result in the liability of the occupier under Section 15 of the Environment (Protection) Act. Thus, it would not be wrong to infer that if there is evidence to support that LG Polymers has violated the provisions of the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, criminal sanctions could also be imposed against the company under the Environment (Protection) Act, 1986.

1.3.2 Chemical Accidents (Emergency, Planning, Preparedness and Response) Rules, 1996:

These Rules were also framed under the Environment Protection Act, 1986 to effectively deal with chemical emergencies and accidents that may arise from industrial activities due to the vast usage of hazardous and toxic chemicals in several sectors of the economy. As per the Rules, chemical accident means any accident that involves an unexpected, sudden or unintended occurrence while handling any hazardous chemicals resulting in continuous, intermittent or repeated exposure to death, or injury to any person or damage to any property. The definition however does not include an accident by reason only of war or radioactivity.[76] On the other hand, a 'major chemical accident' means any major emission, fire or explosion involving one or more hazardous chemicals that results from uncontrolled developments in the course of any industrial activity or transportation of chemicals or due to natural events that leads to serious immediate or delayed effects, inside or outside the industrial installation and is likely to cause substantial loss of life and property including adverse effects on the environment.[77]

Hazardous and toxic chemicals are listed in the three Schedules appended to the Rules. Any chemical that satisfies any of the criteria laid down in Part I of Schedule 1 or is listed in Part 2 of the said Schedule or any chemical listed in column 2 of Schedule 2 and Schedule 3 have been categorized as hazardous chemicals.[78] To facilitate chemical emergency planning, preparedness and response and to assist the public in dealing with chemical accidents, the Rules provide for the establishment of crisis groups and crisis alter systems at the central, state and district level.

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[76]Chemical Accidents (Emergency Planning Preparedness and Response) Rules 1996, Rule 2(a)
[77]Ibid, Rule 2(f)
[78]Ibid, Rule 2(b). Schedule I Part I gives criteria for identifying toxic, flammable and explosive chemicals and Part II lists 431 hazardous and toxic chemicals. Schedule II lists 27 chemicals with threshold planning quantities.[78] Schedule III lists 179 chemicals in Part I that groups chemicals under toxic substances, highly reactive substances and explosive substances in Part I and Part II list flammable chemicals with threshold quantities.

- **Crisis Groups and Crisis Alert System:** The Rules provide for the establishment of Central Crisis Group (CCG), State Crisis Group (SCG), District Crisis Group (DCG) and Local Crisis Group (LCG) to deal with chemical accidents at the Central, State and local level. The Central Crisis Group (CCG) has been set up by Ministry of Environment and Forests, Government of India by an order[79]dated 27th September 1996. This is an apex body comprising senior officials of the Government and technical experts such as Secretary, Ministry of Environment Forest and Climate Change, Joint Secretary or Adviser, Hazardous Substance Management Division in the Ministry of Environment, Forest and Climate Change, Chairman, Central Pollution Control Board, Joint Secretary (Chemicals), Department of Chemicals and Petrochemicals, Joint Secretary (Mitigation), National Disaster Management Authority; Two Experts, one each from the field of Industrial Safety and Health, to be nominated by the Central Government amongst others.[80] The Central Government is also expected to set up a Crisis Alert System to network with the State and District Control Rooms.[81]

  The Rules also mandate the State Governments to set up State Crisis Groups for the management of chemical accidents which should be headed by the Chief Secretary of the State and have other members such as Secretary (Labour), Secretary (Environment), Secretary (Health), Secretary (Industries), Secretary (Public Health Engineering), Chairman of the State Pollution Control Board/Pollution Control Committee in case of Union Territories, Experts (Industrial Safety & Health) to be nominated by the State Government amongst others. [82] The State is also expected to set up District Crisis Groups and Local Crisis Groups, which should be headed by the District Collector and Sub-divisional Magistrate/District Emergency Authority respectively and have representation from other important officers of the district such as Inspector of Factories, Representative of the Department of Public Health Department, Controller of Explosives etc. [83]

[79] Vide Order No. 3-15/91-HSMD dated 27th September 1996 by Ministry of Environment & Forest, Govt. of India
[80]Chemical Accidents (Emergency Planning Preparedness and Response) Rules 1996, Rule 2(a)
[81]Ibid, Rule 4
[82]Ibid, Rule 6, Schedule 6
[83]Ibid, Rule 8, Schedules 7, 8

- **Implementation Mechanism to be adopted by the Crisis Groups:** The Central Crisis Group set up at the Central Level shall act as the apex body to deal with major chemical accidents and provide expert guidance for handling major chemical accidents. It is expected to continuously monitor the post-accident situation arising out of a major chemical accident and suggest measures for prevention and to check recurrence of such accidents; conduct post-accident analysis of such major chemical accidents and evaluate responses; review district off-site emergency plans prepared by concerned authorities under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and check their adequacy and suggest measures to reduce risks in the industrial pockets and monitor the progress of the State Crisis groups and render financial and infrastructural help in case any chemical accident in the states arise. [84]

  The State Crisis Group shall review all district off-site emergency plans in the State and forward a report to the Central Crisis Group once in three months and assist the State Government in managing chemical accidents at a site and in planning, preparedness and mitigation of major chemical accidents. It shall also continuously monitor the post-accident situation arising out of a major chemical accident in the State.[85] District Crisis Groups have been vested with the responsibility of assisting in the preparation of the district off-site emergency plan and reviewing all on-site emergency plans prepared by occupiers of Major Accident Hazard installations. Major Accident Hazard installations have been defined to mean industrial activities that handle or transport hazardous chemicals equal to or in excess of the threshold quantities specified in Schedules 2 and 3 of the Rules.[86] As per the website of the National Disaster Management Authority there are about 1861 Major Accident Hazard units, spread across 301 districts and 25 states & 3 Union Territories, in all zones of country. Besides, there are thousands of registered and hazardous factories (below MAH criteria) and un-organized sectors that deal with numerous hazardous materials that could pose serious risks of chemical disasters.[87] They must also assist the district administration in the management of chemical accidents at a site lying within the district and continuously

[84]Ibid, Rule 5
[85]Ibid, Rule 7
[86]Ibid, Rule 2(g)
[87] 'Status of Chemical Disaster Risk in India' (National Disaster Management Authority)<https://ndma.gov.in/en/2013-05-03-08-06-02/disaster/man-made-disaster/chemical.html> accessed 18 May 2020

monitor every chemical accident in the district. The District Crisis Groups must also conduct at least one full scale mock-drill of a chemical accident at a site each year and forward a report of the strength and the weakness of the plan to the State Crisis Group.[88] The Local Crisis Groups are expected to function within industrial pockets, or the industrial zones earmarked by the Industrial Development Corporation of the State Government. Their functions and responsibilities are similar to the District Crisis Groups. They are expected conduct at least one full-scale mock-drill of a chemical accident at a site every six months and forward a report to the District Crisis Group.[89]

- **Information to the public and database generation:** Since the primary purpose that the Rules seeks to serve is prepare the public for chemical accidents and mitigate the adverse effects of such accidents the Central Government Crisis Groups are expected to disseminate adequate information to the public so that they are better informed to deal with chemical accidents. To this end;
  - The Central Government is expected to take measures to create awareness amongst the public with a view to preventing chemical accidents, publish a list of Major Accident Hazard Installations and major chemical accidents in chronological order and publish a list of members of the Central, State and District Crisis Groups.[90]
  - The Central Crisis Group and the State Crisis Groups shall provide information on request regarding chemical accident prevention, preparedness and mitigation in the country and states, respectively. The State Crisis Groups are also expected to publish a list of experts and officials in the State who are concerned with the management of chemical accidents.[91]
  - The Local Crisis Group shall provide information regarding possible chemical accidents in industrial pockets to the public on request and also assist shall assist the Major Accident Hazard Installations in informing persons who are likely to be affected by a chemical accident.[92]

[88]Chemical Accidents (Emergency Planning Preparedness and Response) Rules 1996, Rule 9
[89]Ibid, Rule 10
[90]Ibid, Rule 4
[91]Ibid, Rule 13
[92]Ibid

Compliance with these Rules is important and industrial activities that are undertaken in violation of these Rules may be ordered to be closed down. In a recent order passed by the National Green Tribunal in October, 2018 in *Social Action for Forest and Environment (SAFE) Vs. Union of India &Others*[93] the Tribunal directed Indian Oil Corporation, Bharat Petroleum Corporation, Hindustan Oil Corporation to not purchase ethanol from units operating without approval of the competent authorities identified under the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996 and who have no safety equipment installed to deal with chemical accidents in compliance with these Rules. The Tribunal acknowledged the importance of ethanol for the environment and the foreign exchange but was not willing to allow the manufacturers of ethanol that have not adopted safety measures approved by statutory authorities in accordance with these Rules to function.

Styrene is listed as a hazardous and toxic chemical under the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.[94]In light of the above decision, a similar order may be passed against LG Polymers by the NGT and it may be asked to cease operations if it is found to be violating the provisions of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996.

1.3.3 Public Liability Insurance Act 1991

The increased use of chemicals in different sectors and the growth of hazardous industries and operations has increased the need for relief measures for persons who may be directly affected by chemical accidents. The Public Liability Insurance Act, 1991 makes owners of companies, firms or associations handling any hazardous substance to provide mandatory monetary relief to any person (other than a workman as defined under the Workmen's Compensation Act, 1923) who may suffer death or injury or damage to property from an accident that has resulted due to the handling of such hazardous substances.[95] Handling of hazardous substance could involve

[93] Original Application No. 684/2018, decided on 30.10.2018
[94]Chemical Accidents (Emergency Planning Preparedness and Response) Rules 1996, Schedule I Part II Entry 365
[95]Public Liability Insurance Act 1991, Section 3

manufacture, processing, treatment, package, storage, transportation, use, collection, destruction, conversion, offering for sale or transfer.

If one were to study the history of the enactment it would become evident that the Act is closely linked with the decision of the Supreme Court in the *M.C. Mehta v. Union of India*,[96]popularly known as the Oleum Gas Leak case, based on a chemical accident that took place in the factory of Shriram Foods and Fertilizers Ltd. in Delhi in 1985. While this case occurred close on the heels of the Bhopal gas leak case, the scale of the accident was slight when compared to the Bhopal tragedy. Nevertheless, the case created widespread panic and public uproar and the Supreme Court which was dealing with a petition on the plant had to entertain a plea for compensation by persons who were affected by the accident. The Supreme Court while deciding this matter laid down the concept of absolute liability of the owner of the chemical plant, something that was unheard of till then in the Indian legal jurisprudence. This judgement that would have far reaching consequences for industries engaged in hazardous activities since they would be made liable for accidents that result from their activities without any scope of defence acted as a precursor to the Public Liability Insurance Act, 1991, which helped to set the rule of no-fault liability within a legislative framework.

- **Insurance Policy for owners:** The Act has made it compulsory for an owner who is involved in the handling of hazardous substances to take out one or more insurance policies, before handling any hazardous substance, so that he is insured to meet any potential liability for any chemical accident that arises. To put it simply, the Act requires owners of industries dealing with hazardous substances to take insurance policies so that they can fulfill their liability to the public that arises in case of any loss suffered due to accidents. The insurance coverage must be continuous and remain in force throughout the period during which the industry or undertaking handles hazardous substance. The insurance policies are to be taken out for an amount that is not less than the amount of the paid-up share capital of the undertaking or the market value of all assets and stocks of the undertaking on the date of contract of insurance that is handling the hazardous substance, capped at a maximum of 50 crores. The liability of the insurer must not exceed the amount

[96]See, M.C. Mehta and Another. v. UOI. (1986) 2 SCC 176: 1986 SCC (Cri) 122

specified in the terms of the contract of insurance.[97] The Act does not apply to all industries or undertakings dealing with hazardous chemicals. It applies only to those industries that handle chemicals equal to or in excess of the threshold quantities stipulated under the Public Liability Insurance Rules, 1991. Part I of the list name 179 chemicals in four groups and part II of the list gives the fifth group covering three classes of hazardous substances not specifically named in Part l.[98]

- **Environmental Relief Fund:** In 2008, the Central Government has established an Environment Relief Fund in exercise of the powers conferred under Section 7A of the Act. The 'Environment Relief Fund Scheme' was introduced by the Government by a notification of the Ministry of Environment, Forest and Climate Change dated 4th November, 2008.[99] The Notification nominated United India Insurance Company Limited as the Fund Manager for a period of five years from the date of notification of this Scheme.[100] The Fund Manager was expected to open and operate a separate account in any Nationalised Bank for administering the Relief Fund in the name and style of "United Insurance Company Limited-Environment Relief Fund Account."The funds existing in the custody of various insurance companies was also ordered to be transferred to the Relief Fund account within sixty days from the date of the notification of this scheme.[101]Subsequently, United India Insurance Company Limited was reappointed as the Fund manager for several terms, the last being up to the period 31st March, 2019.[102]
    - **Money credited to the Environment Relief Fund:** The owner of any industrial unit shall deposit to Environment Relief Fund, amounts equal to that of premium of the insurance policy taken by him and income from investments along with an amount in addition to the premium which shall not be more than the premium amount.[103] Additionally, the notification mandated that amount remitted by the owner, as compensation for environment damages caused, under sub-section (1) of

[97]Public Liability Insurance Act 1991, Section 4
[98] Vide Notification S.O. 227(E), dated 24th March, 1992 published in the Gazette of India, Extra., Pt. II, Section 3(ii), dated 24th March, 1992, pp 6-11 and as corrected by S.O. 283(E), dated 21st April, 1993, Published in the Gazette of India, Extra, Pt. II, Section 3(ii), dated 29th April, 1993, pp. 4-5
[99] Notification G.S.R. 768(E) (Ministry of Environment and Forest, 4 Nov. 2008) (G.S.R. 768(E))
[100]Ibid, Clause 4
[101]Ibid, Clause 5
[102]Notification G.S.R. 606(E) (Ministry of Environment and Forest, 16 June 2016)
[103]Public Liability Insurance Act 1991, Section 4(2C)

section 22 of the National Environment Tribunal Act, 1995 would also be credited to the Environment Relief Fund.[104] The National Environment Tribunal Act has been superseded by the National Green Tribunal Act, 2010

- **Duty of the Owner:** All owners contributing to the Relief Fund shall inform the Fund Manager and the Collector about payment of the amount in Form-III with in fifteen days of making of such payment of contribution to the insurer. If the owner or insurer delays the payment, an interest at the rate of 18% per annum shall be charged.

- **Duty of the Fund Manager:** The amount received under the Relief Fund shall be invested in fixed deposits preferably in the nationalised banks immediately, after leaving the minimum agreed balance in the Relief Fund account, in consultation with the Reserve Bank of India and standing instructions shall be given to the bankers to convert funds over and above the minimum balance to the fixed deposits. The manner for splitting of fixed deposits among the bankers, the maximum and minimum limit and period of such fixed deposits shall be decided by the Fund Manager. The sum accumulated in Relief Fund is to be utilized for paying of relief to affected persons. The liability of the Fund Manager for making the payments from the Relief Fund shall be limited only to the extent of balance available in the corpus. Claim settlement shall be made by the Fund Manager as per the sanction order issued by the Collector. Annual statement of accounts on the management of funds, shall be submitted by the Fund Manager to the Central Government.[105]

- **Role of the Collector:** Application for relief under the Act may be made by the person who has sustained the injury, which could be permanent total or permanent partial disability or sickness resulting out of the accident, the owner of the property that has suffered damage, the legal representative of any person deceased due to the accidents; or an authorized agent of the injured person, property owner or legal

[104]G.S.R. 768(E), Clause 3(4)
[105]Ibid, clauses 5, 6

representative of the deceased person in Form I of the 2008 Notification.[106] The power of receiving applications from the claimants seeking compensation has been vested on the Collector of the District who shall verify the occurrence of such accident, cause publicity and invite applications for compensation and award the amount of relief to the claimant.[107]

It is the responsibility of the insurance company or Fund Manager to deposit with the Collector, the sum awarded within 30 days of the receipt of the demand from the Collector. In case of claims exceeding the insurance liability and the Relief Fund money, the Collector shall demand the remaining relief money from the owner as arrears of land revenue or of public demand. In case the amount of award exceeds the amount payable under the insurance policy of the occupier or exceeds the liability of the insurance company, the Collector shall order the Fund Manager to pay the assessed amount from the Fund. If the money is paid from the ERF, the owner must reimburse this money within a period of 6 months to the Collector who in turn will remit it to the ERF. The Collector is responsible for the recovery of this amount from the owner along with interest as arrears of land revenue or of public demand, in case of delay. If the liability of the owner is higher than the total assets or where the owner is declared insolvent, the matter must be referred to the arbitrator to be appointed by the Central Government who would decide about the liabilities and the recovery of amount from the owner. The Collector is responsible for disbursal of the money to claimants within 15 days of receiving it and is also responsible for furnishing the accounts related to disbursement of relief amounts under ERF within 45 days to the Fund Manager[108]The Collector in deciding the amount of relief to be granted to the affected party shall give an opportunity of being heard to both parties and shall have the powers of a Civil Court.

[106]Public Liability Insurance Act 1991, Section 6
[107]Ibid, Section 5
[108]G.S.R. 768(E), Clause 7

- **Maximum award that may be granted under the Act as relief:** Under the Public Liability Insurance Act, the owner is liable to provide relief for the harm suffered by any person and the measure of such relief or compensation is provided in the schedule to the Act. The relief earmarked for the different categories of harm suffered has remained unchanged since the promulgation of the Act in 1991 and is quite paltry when compared the relief granted under other legislations such as the labour laws.

SI.No.	**Harm/Damage suffered by the accident**	**Maximum relief that may be granted (in INR)**
1.	Reimbursement of medical expenses incurred	12,500
2.	Fatal accidents (in addition to medical expenses of 12,500	25,000
3.	Permanent total or permanent partial disability or other injury or sickness	
3a.	Reimbursement of medical expenses incurred	12,500
3b.	Disablement	Cash relief on the basis of percentage of disablement as certified by an authorised physician
3c.	Total permanent disability	25,000
4.	Loss of wages due to temporary partial disability which reduces earning capacity of the victim, provided the victim has been hospitalized for a period exceeding 3 days and is above 16 years of age.	1,000 per month for a maximum of 3 months
5.	Any damage to private property, depending on the actual damage	6,000

As per Rule 10(1) of the Public Liability Insurance Rules, 1991, for any accidents, the maximum liability of the insurer to pay relief under an award of compensation ordered by the Collector shall be a maximum of 5 crores and in case of more than one accident, during the duration of the policy or one year whichever is less, the amount of relief awarded shall not exceed fifteen crores. In the styrene gas leak case, LG Polymers is insured with New India Assurance Company with a lead share followed by HDFC Ergo, Future Generali and Magma HDI General Insurance. Under the Public Liability Insurance Act, 1991 the company has any One Accident Policy of five crores and additionally an industrial PLI policy with a limit of five crore.[109] Thus, to entertain claims from victims the company would be liable to pay a maximum of up to ten crores, on the basis of the assessment determined by the Collector. But as reflected in the table above, the maximum amount earmarked for the different harm suffered is very meager.

However, if the working of the Environment Relief Fund is looked into, the scenario does not look very promising. Since November 2008, when the Environment Relief Fund was notified, till March 2019, the fund has grown from Rs 283 Crores to Rs 810 Crores and the corpus of the fund has been invested in fixed deposits in 13 different banks.[110] Since the enactment of the NGT Act, 2010, section 24 of the Act requires that any compensation or relief awarded for damage to the environment by the National Green Tribunal should be remitted to the ERF, since the Act has superseded the National Environment Tribunal Act. Reports reveal that the Fund Manager of the Environment Relief Fund has not maintained any separate account for contributions to the ERF for compensation or relief for environmental damage as a result of awards or orders made by the NGT. RTI applications filed before the MoEF&CC has brought to light the fact that records of the compensation awarded by NGT in terms of Section 24(1) of the NGT Act have not been maintained.[111] Thus, it may be inferred that the amount of money disbursed for the payment of relief or

[109]Rachel Chitra, 'Claims could run into crores in LG Polymers gas leak' *The Times of India* (Bengaluru, 7 May 2020) <http://timesofindia.indiatimes.com/articleshow/75595658.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst> accessed 18 May 2020

[110]Axis Bank, Canara Bank, City Union Bank, Federal Bank, Indian Overseas Bank, IndusInd Bank, Karnataka Bank, Kotak Mahindra Bank, Lakshmi Vilas Bank, Lakshmi Vilas Bank, Lakshmi Vilas Bank, Vijaya Bank, Yes Bank, Andhra Bank, IDFC, Karur Vysya bank

[111] Debadityo Sinha, 'Report on the Management of Environment Relief Fund, March 2020' <https://vidhilegalpolicy.in/wp-content/uploads/2020/03/Management_of_ERF_Debadityo_Sinha_VCLP_2020.pdf> accessed 18 May 2020

compensation to victims of accidents under the Public Liability Insurance Act is also not available. There is dearth of information on the number of accidents involving hazardous industries, the losses incurred, and status of claims accepted or rejected by District Collector, and the overall functioning of the Environment Relief Fund.

A press release of the Ministry of Environment, Forest and Climate Change in September 2015 reflected that the Public Liability Insurance Act was not being properly implemented. The Central Pollution Control Board was directed to ensure that the State Pollution Control Boards do not issue or renew Consent to Establish (CTE) or Consent to Operate (CTO) to industries that do not comply with the obligation of the PLI Act, 1991 and that the insurance policies of the industries would be seen as one of the essential checkpoints for grant of consent. The Ministry directed big industry houses and industry associations such as FICCI, CII, CMA, ICC, etc. to subscribe to PLI policy and pay towards the ERF. The press releases also revealed that the ERF had a total corpus of Rs. 573 crores as on 31.03.2015 from which no expenditure had been made other than fees made to the fund manager.[112]

The Act imposes penalties for the contravention of its provisions. A restraining order may be placed against an owner by an application made by the Central Government or other authorized person before a Court, not inferior to that of a Metropolitan Magistrate or a Judicial Magistrate first class, if the owner is found to be handling hazardous substance in contravention of the provisions of the Act.[113] Additionally, there are other penalties that the Act imposes on owners. However, no penal action under the said sections has been taken by the Ministry till date.[114]

Moreover, the Act imposes a limit of five years to make a claim under the Act, which could be insufficient, because on several occasions the deleterious effects of hazardous substances often take longer to surface as has been evidenced in several chemical disaster where the harmful effects on human life, property and the environment has transcended generations. Another feature of the Act that acts to the disadvantage of the purported victims it seeks to safeguard, is the absence of

[112] 'Environment Ministry Directs CPCB to Ensure Better Implementation of Public Liability Insurance Act, 1991' (Press Information Bureau, Government of India, Ministry of Environment, Forest and Climate Change, 7 Sept. 2015) <https://pib.gov.in/newsite/PrintRelease.aspx?relid=126680> accessed 18 May 2020
[113] Public Liability Insurance Act 1991, Section 13
[114] See, Debadityo Sinha, (n 111)

the provision for class action litigation, which could have assisted poor and hapless victims in seeking relief.

1.3.4 National Disaster Management Act, 2005

The National Disaster Management Act, 2005 has been enacted to ensure effective management of disasters in the country. The term 'disaster' has been defined to mean a catastrophe, mishap, calamity or grave occurrence in any area that could arise from natural or manmade causes, or by accident or negligence. This should result in substantial loss of life or human suffering or damage to property, or degradation of environment. For any occurrence to be a disaster, it must be of such magnitude or nature that is beyond the coping capacity of the community of the affected area.[115] As per the Act, disaster management includes the process of planning, coordinating and implementing measures for preventing danger or threat of any disaster; mitigating or reducing risk of any disaster or its severity, capacity-building, preparedness to deal with any disaster; prompt response to any disaster; assessing the severity or magnitude of any disaster; evacuation, rescue and relief and rehabilitation and reconstruction. [116]

The Act has provided for the establishment of National Disaster Management Authority (NDMA), with the Prime Minister of India as the ex-officio chairperson, that is the national apex body for disaster management in the country. The NDMA constituted under Section 3 of the Act is vested with the responsibility of laying down the policies, plans and guidelines for effective disaster management. In addition to the NDMA, the Act also envisages the establishment of State Disaster Management Authorities and District Disaster Management Authorities headed by respective Chief Ministers, and District Collectors to implement a holistic and integrated approach to Disaster Management for the whole of India and the respective states. The Act provides for the formulation of a National Disaster Management Plan for the country as a whole and a State Disaster Management Plan to meet the state specific requirements and vulnerabilities that is peculiar to each state. The NDMA is assisted by the National Executive Committee which is headed by the Secretary to the Government of India in charge of the Ministry or Department having administrative control of the disaster management. The National Executive Committee is

[115] National Disaster Management Act 2005, Section 2(d)
[116]Public Liability Insurance Act 1991, Section 2(e)

responsible for implementing the policies and plans of the NDMA and acts as the coordinating and monitoring body for the implementation of the National Plan.[117]Similar provisions have been made in the Act for the constitution of a State Executive Committee to assist the State Disaster Management Authority and act as the coordinating and monitoring body for management of disaster in the State and implement the National and State Disaster Management Plan. The Act has also provided for the establishment of a National Institute of Disaster Management that is responsible for capacity building and training, and evolution of human resource development plan covering all aspects of disaster management for the different stakeholders involves in disaster management.[118]

The functions and responsibilities of the NDMA include:

- Laying down policies on disaster management;
- Approving the National Plan for disaster management for the whole of the country and other plans prepared by Ministries or Departments of the Government of India in accordance with the National Plan;
- Laying down guidelines to be followed by the State Authorities in drawing up the State Plan;
- Laying down guidelines to be followed by the different Ministries or Departments of the Government of India for the Purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects;
- Coordinating the enforcement and implementation of the policy and plans for disaster management;
- Recommending provision of funds for the purpose of mitigation;
- Providing such support to other countries affected by major disasters as may be determined by the Central Government;

[117]Ibid, Section 8,10
[118]Ibid, Section 42

- Taking such other measures for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with threatening disaster situations or disasters as it may consider necessary;
- Laying down broad policies and guidelines for the functioning of the National Institute of Disaster Management.[119]

1.3.4.1 Managing Chemical Disasters under the National Disaster Management Plan of 2019

In so far as the management of industrial chemical disasters is concerned, the National Disaster Management Plan of 2019 has identified responsibilities for different institutions and authorities in the Central and the State Government to identify risk of chemical disasters, ensure inter-agency coordination, capacity development and investing in structural and non-structural measures of disaster risk reduction. The National Disaster Management Plan also provides timelines for the fulfillment of these responsibilities which has been reflected in the tables below:

AREAS OF INTERVENTION	**CENTRE**		**STATE**	
	Ministries Responsible	Responsibility	Institutions Responsible	Responsibility
Information Systems, Monitoring, Research	MOEFCC to play a lead role assisted by other Ministries[120]	**Short Term (T1)** • Online information system on Hazardous Chemicals conforming to international standards • Chemical Accident Information Reporting System	Disaster Management Department, State Disaster Management Authority, Industries Department,	**Recurring/ Regular (RR)** Support and coordination

[119] Ibid, Section 6

[120] Such as Ministry of Labour and Employment, Ministry of Chemicals and Fertilizers, Ministry of Coal, Ministry of Corporate Affairs, Ministry of Food Processing Industries, Ministry of Heavy Industries and Public Enterprises, Ministry of Micro, Small and Medium Enterprises, Ministry of Mines, Ministry of New and Renewable Energy, Ministry of Petroleum and Natural Gas, Ministry of Parliamentary Affairs, Ministry of Railways, Ministry of Steel, Ministry of Textiles.

		• Information on dealing with Hazardous Chemicals **Medium Term (T2)** •Research on effective management of Hazardous Chemicals • National Hazardous Waste Information System (NHWIS) **Long Term (T3)** • Promote research by providing research grants to researchers and institutions • Promote R&D for indigenous manufacture of quality personal protection equipment most of which are currently imported • Studies on improving occupational safety	State Pollution Control Board, District Disaster Management Authority	
Zoning/ Mapping	MOEFCC, to play a lead role assisted by other Ministries	**Recurring/ Regular (RR)** Guidance, Data Management	Same as Above	**Medium Term (T2)** • Industrial zones on basis of hazard potential and effective disaster management for worst case scenarios for MAH Units

				• Separate zoning f or sing of MAH units • Mapping and related studies in collaboration with central agencies/ technical organizations
Monitoring	MOEFCC, to play a lead role assisted by other Ministries	**Recurring/ Regular (RR)** Monitoring compliance with safety norms for Hazardous Chemicals and proper disposal of hazardous waste	Same as Above	**Recurring/ Regular (RR)** Monitoring compliance with safety norms for Hazardous Chemicals and proper disposal of hazardous waste
Hazard Risk Vulnerability and Capacity Assessment (HRVCA)	MOEFCC, to play a lead role assisted by other Ministries	**Recurring/ Regular (RR)** • Promote studies, documentation and research • Studies on vulnerabilities and capacities covering social, physical, economic, ecological, gender, social inclusion and equity aspects • Provide technical support and guidance for comprehensive Hazard Risk, Vulnerability and Capacity Assessment	Disaster Management Department, State Disaster Management Authority, Industries Department, State Pollution Control Board,	**Recurring/ Regular (RR)** Undertake Hazard Risk, Vulnerability and Capacity Assessment as part of preparing and periodic revision of DM plans **Short Term (T1)**

			District Disaster Management Authority Department of Social Justice and Empowerment, Panchayati Raj Institutions, Urban Local Bodies, District Disaster Management Authority	Constitute/ strengthen the mechanisms f or consultation with experts and stakeholders
Disaster Data Collection and Management	Ministry of Home Affairs, Ministry of Statistics and Programme Implementation, All Ministries/ Depts.	**Recurring/ Regular (RR)** Systematic data management of data on disaster damage and loss assessments	Disaster Management Department, SDMA, all depts	**Recurring/ Regular (RR)** Systematic data management of data on disaster damage and loss assessments

1.3.4.2 Inter-Agency Coordination between Ministries and Institutions for management of Chemical Disasters

AREAS OF INTERVENTION	**CENTRE**		**STATE**	
	Ministries Responsible	Responsibility	Institutions Responsible	Responsibility

Overall disaster governance	MOEFCC to play a lead role assisted by Ministry of Corporate Affairs	**Recurring/ Regular (RR)** Providing coordination, technical inputs, and support	Disaster Management Department, State Disaster Management Authority, Industries Department, State Pollution Control Board, District Disaster Management Authority Revenue Department, PRIs, ULBs, Industry/ Business/ Trade Association	**Recurring/ Regular (RR)** Support and coordination
Response	MOEFCC, to play a lead role assisted by other Ministries	**Recurring/ Regular (RR)** Organizing and coordinating central assistance	Same as Above	**Recurring/ Regular (RR)** • Organizing and coordinating the immediate response • Coordinate with central agencies

Warnings, Information, Data Dissemination	MOEFCC, to play a lead role assisted by NDMA, MCA	**Recurring/ Regular (RR)** Effective coordination and seamless communication among central and state agencies to ensure quick, clear, effective dissemination of warnings, information and data	Same as Above	**Recurring/ Regular (RR)** Coordinating the dissemination of warnings to all, down to the last mile – remote, rural or urban; Regular updates to people in areas at risk
Non-structural measures	MOEFCC, to play a lead role assisted by other Ministries	**Recurring/ Regular (RR)** Coordination among central and state agencies for a) revised/ updated rules, norms b) adoption of new/updated standards, c) enact/amend laws, regulations and d) adopt/ review policies	Same as Above	**Recurring/ Regular (RR)** Coordination among state agencies for ensuring updated norms/ c odes and their implementation, enforcement and monitoring

1.3.5 The Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016

As the name suggests, these Rules deal with hazardous waste management in the country and the transboundary movement of hazardous waste. The first comprehensive rules on hazardous waste management were brought about in July 1989 through the Hazardous Waste (Management and Handling) Rules 1989 which has undergone several revisions and replacements and the Rules of 2016 stands as of date, which has been recently amended in 2019. In addition to the management

of hazardous waste, that involves prevention, minimization, reuse, recycling, recovery, utilisation and safe disposal of hazardous waste[121] the Rule vest the responsibility on the occupier of any factory or premises that generates hazardous waste to prevent and report about chemical accidents.

- **Preventing accidents:** The Rules require all occupiers while managing hazardous and other wastes to take steps to ensure the containment and prevention of chemical accidents and to limit their consequences on human beings and the environment. Moreover, occupiers are also expected to ensure that persons who work in the sites are imparted appropriate training, equipment and information necessary to ensure their safety from these hazardous chemical wastes.[122]
- **Reporting Accidents:** If any accident occurs at any facility where hazardous waste is managed, or during transportation of the hazardous waste, the occupier, operator of the hazardous disposal facility or the transporter of hazardous waste shall be duty bound to inform the State Pollution Control Board through telephone, e-mail about the accident and subsequently send a report in Form 11 appended to the Rules.[123]The information furnished to the State Pollution Control Board should include the date and time of the accident, sequence of events leading to accident, details of hazardous and other wastes involved in accident, date for assessing the effects of the accident on health or the environment, the emergency measures taken, steps taken to alleviate the effects of accidents and the steps take to prevent the recurrence of such an accident.

1.4 COMPARATIVE DOMESTIC LEGAL SCENARIO IN SOUTH KOREA

Officially known as the Republic of Korea, South Korea witnessed a radical shift from agrarian to industrial post Second World War. The Industrial skyrocketing has necessitated stringent measures, under various laws to prevent disasters and adverse effects to the environment due to environment and industrial accidents. South Korea has numerous laws ranging from constitutional law to some specific laws to deal with the chemical and environmental accidents.

[121]The Hazardous and other Wastes (Management and Transboundary Movement) Rules 2016, Rule 4(1)
[122]Ibid, Rule 4(6)
[123] Ibid, Rule 22

Two major and worst accidents were *Nakdong River phenol contamination* incident of 1991[124] and *Hydrogen fluoride leakage accident* in Gumi City of 2012[125]. These incidents have forced the concerned governmental authorities to revisit the relevant regulations and make them more stringent to deal with such situations and possibly prevent them in future.

The South Korean Constitution, paramount law of the land[126], imposes a duty on the State to confirm and guarantee the fundamental and inviolable human rights of individual.[127] Further, specifically, the right to a healthy and pleasant environment is guaranteed to the individuals under Article 35 (1).

1.4.1 **Environmental Laws of South Korea:**

Under the various environmental statutes, liability to report environmental accidents to the regulators has been imposed. For instance, under the ***Soil Environment Conservation Act,*** liability to report soil contamination in the facility is imposed on any person owning, occupying or operating soil contaminating facilities.[128] The Act mandates remediation according to the purification standards and methods prescribed by Presidential Decree.[129]

1.4.1.1 The Ground Water Act, 1999:

This enactment necessitates a permit to commit an act leading to apparent dangers as lowering of Groundwater level, pollution of the groundwater quality or subsidence of the ground etc. as prescribed by the presidential decree.[130] Further, such authorised person must install facilities for preventing pollution of the groundwater, or as prescribed by the presidential decree[131] failure of

[124] In March 1991, 30 tons of phenol spilled into the Nakdong River from a damaged pipe in a Doosan Electro-Materials factory in Gumi City, causing thousands of residents downstream in Daegu to become ill. Available at, https://www.nytimes.com/1991/04/16/business/chemical-leak-in-korea-brings-forth-a-new-era.html

[125] On September 27, 2012, leakage of anhydrous hydrofluoric acid occurred in a chemical plant in the Gumi industrial complex, Gyeongsangbuk-do, Korea. The accidental release of approximately 8 tons of the gas killed five people who were directly exposed to the highly concentrated hydrogen fluoride. Available at, https://www.bbc.com/news/world-asia-19867454

[126] Available at: http://law.go.kr./LSW/eng/engAbout.do?menuId=3

[127] Article 10 of the Constitution of the Republic of Korea.

[128] Article 11(1) of Soil Environment Conservation Act, 2015

[129] Id. Article 15–3

[130] Article 13 (Prohibition of Actions within Groundwater Preservation Area) of Ground Water Act, 1999

[131] *Id.* Article 16 (Order for Preventing Pollution of Groundwater, etc.)

which attracts fine for negligence[132]. The contravention of these procedures attracts the penal provision of Article 37 in case of individual, and under Article 38, in case of companies.

1.4.1.2 The Water Quality and Ecosystem Conservation Act, 2005

This law imposes a liability on the person who transports and stores substances such as oils, harmful to water quality, pollutes the water quality with such substances, to promptly make a report to the relevant local environmental administrative agency or administrative agencies.[133]

1.4.1.3 The Clean Air Conservation Act of 2007

It is pertinent to note that this Act of 2007 prescribes the standards to be maintained by various industries to prevent pollution[134] and imposing emission charges[135], penalty in case of emissions[136] and cancellation of permit.[137]

1.4.1.4 Act on Liability and Relief for Damages from Environmental Pollution (The Damage Relief Act), 2014

Enacted in 2014 to provide prompt, unbiased relief to victims by defining the liability and easing burden of proof for victims.[138] The Act is applicable to all business facilities emitting Air pollutants, construction waste etc. and adopts the "no-fault liability"[139] and "polluter pays"[140] principles. Business owner mandated to avail Environmental Liability Insurance[141] covering legal liability to third party for damages to property or person and clean-up cost.

1.4.1.5 Framework Act on Environmental Policy, 2011:

Towards ensuring a healthy and pleasant life by preventing environmental pollution damage,[142]this law recognises the principles of strict liability and polluter pays principle.[143]

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[132] *Id.* Article 38(2)
[133] Article 16 (Report on Water Pollution Accident) of Water Quality and Ecosystem Conservation Act, 2005
[134] Article 26 of Clean Air conservation of 2007
[135] *Id.* Article 35
[136] *Id.* Article 89
[137] *Id.* Article 36.
[138] Article 1 of the Act on Liability and Relief for Damages from Environmental Pollution (the Damage Relief Act), 2014
[139] *Id.* Article 6
[140] *Id.* Articles 7 and 14
[141] *Id.* Article 17
[142] Article 1 of Framework Act on Environmental Policy, 2011
[143] *Id.* Article 7

1.4.1.6 Act on the Control and Aggravated Punishment of Environmental Offenses, 2011:

Formulated with an objective to contribute to environmental conservation by providing aggravated punishment for, and the control, prevention, etc. of, any act of polluting or damaging the environment, etc.[144] such as illegal discharge of Pollutants[145], contaminating environmental Protection area[146], Criminal Negligence.[147]

1.4.2 **Laws regulating Industrial Accidents in South Korea:**

Towards creating a strict regime of protection from industrial harm, the following legislations have been enacted by South Korea.

1.4.2.1 Industrial Accident Compensation Insurance Act, 1994:

Enacted towards ensuring insurance contribution to the protection of employees148 by compensating them promptly and fairly for any occupational accident.149 Chapter VIII deals with the penalty provisions.

1.4.2.2 Occupational Safety and Health Act, 1990:

A social security legislation was enacted to maintain and promote the safety and health of employees by preventing industrial accidents by establishing standards on industrial safety and health150. Chapter IX deals with penalty provisions.

1.4.2.3 Labor Standards Act, 1997:

This law mandates every employer to provide necessary medical treatment for an employee who suffers from an occupational injury or disease.[151] Chapter XII deals with penalty provisions.

1.4.2.4 High Pressure Gas Safety Control Act, 1983

This law provides for matters pertaining to the production, storage, sale, transportation and use of high-pressure gas to ensure gas safety and prevent hazards caused by high-pressure gas and to secure public safety. Article 38-42 deals with penal provisions for contraventions.

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[144] Article 1 of Act on the Control and Aggravated Punishment of Environmental Offenses, 2011
[145] *Id.* Article 3
[146] *Id.* Article 4
[147] *Id.* Article 5
[148] Article 6 Industrial Accident Compensation Insurance Act, 1994
[149] *Id.* Article 1
[150] Article 1 of Occupational Safety and Health Act, 1990.
[151] Article 78 of Labor Standards Act, 1997.

1.4.2.5 Consumer Chemical Products and Biocides Safety Act, 2018

This law regulates consumer chemical products, biocidal products and biocide-treated articles.

1.4.2.6 Chemicals Control Act, 1991

The purpose of this Act is to prevent any risk caused by chemicals to human health. Chapter VII deals with penalty provisions. Korea REACH[152] is a part of this law and was introduced in 2015. It regulates the designation of hazardous chemical substances through registration and evaluation.

1.5 INTERNATIONAL REGULATORY POLICY ON CHEMICAL ACCIDENTS

While the *Vishakapatnam Episode 2020* of release of Styrene gas leaks from one of the two storage tanks of the capacity of 2,000 metric tonnes at LG Polymers (India) Private Limited ensembles a *deja-vu* of the horrific memoirs Bhopal Gas Tragedy 1984 and the *Oleum Gas Leak 1985*, the regulatory and policy landscape on the preparedness for the incident and corrective action, on paper, has been formulated, domestically and internationally. However, in no means does the researcher contemplate that the same does not pose a significant challenge to the regulatory authorities.

Similar to the Indian Scenario, the Basel warehouse fire (1986) caused large-scale pollution of the River Rhine; and the *Baia Mare* spill (2000) had left the Danube River almost devastated, as such the International Community has been in involvement to create a robust regulatory framework in the preparedness in handling of hazardous substances, including chemical accidents. In this regard, it is pertinent to note that although there is a void of a single international organization that establishes the rules of general application, there has been a development of broad guidelines[153], including in the prospects of EU law and OECD Guidelines, but however its ambit of implication of industrial corporations *per se*, is minimal and beyond scope, and given that the International framework essentially seeks to operate on areas of pinning of liability, only in case of Transboundary Harm, it has little or no binding effect on States, *ipso facto*.

Although, the *Vishakapatnam Episode* can be a critical remark on the contribution to the satisfaction of Goal 12 of the Sustainable Development Goals 2020, which requires the aspect of

[152]The Korea REACH is similar to the EU REACH. REACH stands for Registration, Evaluation, Authorization, and Restriction of Chemicals.

[153] Stockholm Declaration of the United Nations Conference on the Human Environment (1972) U.N. Doc.A/CONF.48/14/Rev.1, Principle 6; Rio Declaration on Environment and Development (14 July 1992) UN Doc. A/CONF.151/26 Principle 14

the immediate regulatory response in the form of an Interim-compensation or penalty of INR 50 Crores[154] by the National Green Tribunal is integral to support the development of a robust enforcement framework.

1.5.1 OECD Guiding Principles for Chemical Accidents, Prevention, Preparedness and Response:

OECD Guiding Principles for Chemical Accidents, Prevention, Preparedness and Response aims at setting the guidelines to be followed for safe planning and operationalizing of the chemical and hazardous substances so that any environment fatality can be prevented and the aftermaths of the disasters can be mitigated. The OECD principles on disaster seek to primarily address four issues: (i) to prevent occurrence of any life threatening disaster (ii) to contain the adverse effects of the disaster through communication and health safety measures (iii) to respond to the adverse effects on human, property and environment and (iv) lastly to follow up upon the aftermath and endeavoring to investigate and clean up the affected area.

Many a time when industrial disasters occur, the standard civil safety measures are not complied with by the industrialists and the OECD seems to make a case for civil protection measures which also evidently seems to be absent in recent Vishakapatnam disaster in India. Both on-site and off-site emergency plans should be in place to mitigate the repercussions of the disaster.[155]

Right to Know: Under the framework of OECD, the government and industry personnel are required to share all the information concerning the safety of locals. The information about the potential threats, necessary guidance to evade such eventuality, source of leakage (eventuality) and whether efforts are being made to inform public about relevant casualty all need to be shared by the industry.[156] Also, the enterprises engaged in the storage of hazardous substances must establish effective communication with rescue authorities.

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[154] See, Order of NGT *Supra*

[155]See, Necci, Amos & Krausmann, Elisabeth & Girgin, Serkan. (2018). Emergency planning and response for Natech accidents.

[156] Marie Chantel Huet, 'Transparency and communities right-to-know: working towards better disaster management through the OECD', <http://www.uneptie.org/media/review/vol27no2-3/530904_UNEP_BD.pdf#page=65>accessed 12 May 2020.

Presently there are more than 1700 major accidental hazard units in the country and several other small and medium industries. In light of such exponential number, the probability of chemical accident increases and therefore in a workshop, the ministries have highlighted the need to develop regulatory and legal framework to govern chemical substances and for developing reporting system of such disasters.[157]

OECD has developed following framework[158]on Chemical Accident programme to shape the policies of the member countries:

1. Recommendation of the council committee on polluter pays principle
2. Recommendations about the implementation of the "OECD Guiding Principles on Chemical Accidents Prevention, Preparedness and Response".
3. Recommendation about information disbursal and public participation
4. Recommendation about the safe handling and storage of the hazardous substances.

Chapter 8 of the OECD principles also prescribes that there should be immediate alert response system which would help in triggering of safety equipment's and at the same time intimate the authorities about the possible emergency at the site. Such systems will also the workers to evacuate immediately and to ensure their own safety. The people responsible for the planning of safety plan should take all possible efforts to mitigate the risks of the accident. Also, the spokesperson appointed by the enterprise to communicate about the incident must have the necessary knowledge, skills and credibility to communicate with the people.

On happening of the event, there should be immediate activation of the on-site safety plan. And if the enterprise thinks that they cannot mitigate the situation, the emergency team or the authorities must be immediately called. OECD environment committee in 1985 had declared that they will make all endeavors to control and prevent the installation of unsafe environment equipment's. There is all likelihood that the enterprise in Vishakapatnam disaster has not taken any of the precaution or attempted to mitigate the circumstance. One of the primary reasons can be that there

[157]Ministry of Environment and Forests, Govt. of India and National Institute of Disaster Management, New Delhi, 'Chemical Disaster Management' (March 2009)
[158] Nuclear Energy Agency, 'Towards an All-Hazards Approach to Emergency Preparedness and Response: Lessons Learnt from Non-Nuclear Events', <https://www.oecd-nea.org/rp/pubs/2018/7308-all-hazards-epr.pdf>accessed 18 May 2020.

were not many people as they were just opening after the lockdown, but it cannot be a reason to absolve them from their liability towards the employees and environment.

It can be safely concluded that the most important thing while any disaster happens is firstly sharing all the relevant information not only with authorities but also with employees and workers, secondly taking lessons from the past disasters, and thirdly harmonization between education activities and enforcement measures.[159]

1.5.2 Awareness and preparedness for emergencies at local level (APELL):

The APELL Programme ("Awareness and Preparedness for Emergencies at Local Level") is started by the UNEP to raise awareness among the local communities concerning the harmful effects of the technological and hazardous accidents. The programme also sought to engage with the industry personnel's themselves to mitigate the harmful effects by urging to create local groups and spread awareness among the people of nearby areas regarding the safety precautions and how they need to prepare themselves when a hazardous accident happens. The programme was developed after repeated requests from several governments to create a system to address the increasing industrial disasters particularly in industrializing nations.[160] The programme has been developed in partnership with several stakeholders including industry associations, governments and educates the local authorities to prepare themselves for such eventuality.

The aftermath of the Bhopal Gas leak in the year 1984, the international community compelled the United Nation Environment Programme (UNEP) to take some serious action to mitigate the ramifications in the lives of the people and subsequently the APELL programme was established.

In India, the APELL has partnered with the National Safety Council for its implementation in the country. Endeavors were made by involving authorities at both the central as well as state level. While the authorities at the national level were responsible for augmenting awareness and building consensus, and developing guidelines, the authorities at the state level were tasked with identifying the needs of the community. Chemical Accident (Emergency Planning, Preparedness and

[159] Sara Visentin, 'Lessons learned from Industrial Chemical Accidents: Italian and International Initiatives', <https://link.springer.com/chapter/10.1007/978-1-4020-5098-5_3> accessed 12 May 2020

[160] ADPC and UNEP build capacity on community awareness and preparedness for technological hazards, ADPC, <https://www.adpc.net/igo/contents/Media/media-news.asp?pid=924&topic=>accessed 18 May 2020.

Response) Rules of 1996 provides legal backing to the formation of groups akin to APELL in all industrial areas where the hazardous equipment's are installed. Also while the enactment of Guidelines on Chemical (Industrial) Disasters issued by the National Disaster Management Authority in 2007, the APELL guidelines have been followed.

APELL provides for the process through which the communities can be engaged. One of the integral part of the processes is to effective communication during the period of anticipation phase.[161] If there is no effective communication at that time, the people might create a panic and in addition to misinformation likely to be spread in such time, the situation might turn into a chaos.

The benefits of the APELL programme cannot be overlooked and especially in light of Vishakapatnam disaster where several people as lost their lives. If the guidelines of the APPEL would have been followed and local community level groups were formed to educate the people, the repercussions of the disaster might have been mitigated. Even the National Policy for Disaster Management encourages involvement of local bodies and civil society members to bring in transparency and accountability as well as to combat any such emergency. Also, the International Federation for Red Cross society has appealed that the utilization of local workforce is one of the indispensable requirements to mitigate the consequences of the disaster. APPEL would have ensured efficient handling of the crisis with minimum damage as it not only builds an effective emergency response system but also builds confidence of local people by engaging them in dialogue.[162]

1.5.3 Prevention of Major Industrial Accidents Convention, 1993

This convention ratified by India on 06 Jun 2008, applies to all major Hazard Installations excluding nuclear installations and plants processing radioactive substances; military installations; and transportation outside the site of an installation other than by pipeline. This convention creates a policy of regulation of hazard installation and provides duties on the Employer, Competent

[161] Anna Ramsbottom, 'Enablers and Barriers to Community Engagement in Public Health Emergency Preparedness: A Literature Review' (2018) 43 J Community Health <https://link.springer.com/content/pdf/10.1007/s10900-017-0415-7.pdf> accessed 12 May 2020)

[162] 'Disaster Risk Management: Awareness and Preparedness for Emergencies at Local Level (APELL)' (Working Group Sustainable Industrial Areas) <https://www.sia-toolbox.net/solution/disaster-risk-management-awareness-and-preparedness-emergencies-local-level-apell> accessed 12 May 2020

Authorities and Exporting States, on matters of Safety of personnel, Siting of Hazardous Installations, Emergency Planning, *inter alia,* Reporting of Accidents.

The implementation that is proposed by the convention is by way of a National Legislation through a competent authority. The chief drawback of the convention is that, it only provides for the sharing of information, and does not provide for pinning of liability on account of breach, thereby making it open for contention.

1.5.4 ILO Code of Practice on Prevention of Major Industrial Accidents (1991)

With a rise in the industrial accidents, on account of increased production, storage and use of hazardous substances, for industrial application, the Governing Body of the ILO at its 244th Session (November 1989) felt the need for a comprehensive code of practice that would help in the prevention of such Industrial Hazards, which resulted in the drafting of the Code of Practice on Prevention of Major Industrial Accidents(Hereinafter, "the Code"). Although, recommendatory in nature, the document goes a long way in the creation of a national policy on the subject, while it comprehensively covers all arrays on the subject-matter.

1.5.4.1 Underlying Basic Principles:

i. Hazardous Installations have the potential to cause major accidents:
   One of the foremost principles for the code of practice is that the very nature of hazardous installation creates a potential threat to cause a major accident. According to the Code, the general categories of such accidents, which may be broadly summarized as follows:
   - Release by way of leakage of toxic substances in any given industrial site, can have an impact on places that are at a considerable distance from the place of release.
   - Release of flammable liquid or gases can cause a combustion so as to produce high levels of thermal radiation, or in other likelihoods create an explosive vapour cloud.
   - Chemicals that are Explosive, unstable or have a high rate of reactivity, may cause an explosion, affecting the industrial site and the surrounding areas.

ii. Major Hazard Control System: Pursuant to the Code, a Major Hazard Control system is required to be created by the competent authorities, with the following criterions:
   - Identification of Major Hazard Installations
   - Identification and Allocation of National Priorities and Availability of Resources.

- Legislation for intimation of such major hazard installations
- Well-defined criteria based on quantity and classification of hazardous substances

iii. Integrated Plan of Safety Management: All stakeholders to ensure the existence of an on-site emergency plan, based on the consequences of potential major accidents. The on-site emergency plan is required to be tested and rehearsed to identify any weaknesses in the plan, and that such weaknesses are quickly corrected.

iv. Co-operation and Consultation among Competent Authorities, Works Managements, And Workers and Their Representatives

However, the Code fails to discuss the aspect of Liability in the case of accidents and is merely a guiding book of principles that can be followed by various parties engaged in hazardous installations.

1.5.5 Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

A Conference of Plenipotentiaries in Rotterdam adopted the Rotterdam Convention on 10 September 1998. The Convention entered into force on 24 February 2004. The objectives of the Convention are:

- to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm;
- to contribute to the environmentally sound use of those hazardous chemicals, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.

1.5.6 The Convention on Transboundary Effects of Industrial Accidents 1992:

The Convention on Transboundary Effects of Industrial Accidents 1992aims to protect human beings and the environment from the industrial accidents and disasters by preventing the

occurrence of such accident to every possible extent and developing strategies to mitigate and reduce severity and frequency of such accidents.

1.5.6.1 Obligations of a defaulting party:

Under the convention the defaulting party must take the following actions when a hazardous accident happens:

i. The party of origin must also make sure that potentially affected parties are made aware of the fact that they are engaging in a hazardous activity. The public in the area who may be potentially affected must be adequately informed about the nature of hazardous activities that are engaged in. and also the origin must make efforts to take into consideration the views of the local people while framing any procedures. (list of hazardous substances is mentioned under Anne I)
ii. A complete memorandum of information to be given to public must be prepared and it must include details like nature of the activity, the risks involved, potential effect on the population, how they will be warned in case of contingency, arrangements made to mitigate the accident.
iii. Both on-site and off-site contingency plan must be prepared to minimize and eliminate the Trans boundary effects. (Examples of the same are given under Annex VII)
iv. Arrangements must be made to provide early warning to the public authorities about the nature and extent of the disaster. For this, an Industrial accident notification system must be in place that can process the data and examine the extent of damage already done.
v. If the parties anticipate that the activities, they are indulging in may result in Trans boundary harm, then they must enter into discussion on identification of such hazardous activities. And if parties do not reach a consensus, then they submit that question to an inquiry commission set up under the convention. The parties then must comply with the Annexure III.
vi. if the nature of the activity is such that, Environmental Impact Assessment is required, then in such case, the assessment must be in accordance with the Convention on Environmental Impact Assessment in a Trans boundary Context.
vii. The parties must make endeavor to rescue the human beings and environment and attempts to lessen the severity and frequency by mitigating the effects. The parties must develop

strategies for reducing the impact of the accidents by employing the means of consultation, exchanging information and cooperative measures without any delay while at the same time ensuring that there is no duplication of efforts at both national and international level.

viii. While implementing the rescue strategies, the parties must abide by necessary legislative, administrative and regulatory measures.

ix. The rescue policies and strategies of the parties must not be in derogation to their obligations under the International Law relating to hazardous and industrial accidents.

1.5.6.2 Pinning of Liability

With respect to liability, the convention does not talk about the consequences if any party acts in breach of it. In the conference of parties held in 2000, the parties recognized the shortcomings of the civil liability instruments and stressed upon developing a legally binding instrument. In 2001, another special joint session was convened and it was decided that an intergovernmental negotiation process should be entered into *"aimed at adopting a legally binding instrument on civil liability for transboundary damage caused by hazardous activities."*

For the purpose Article 13 of the convention is relevant:

Article 13. - Responsibility and Liability- The Parties shall support appropriate international efforts to elaborate rules, criteria and procedures in the field of responsibility and liability.

Annexure V of the Convention deals with the matrix on which the liability of the party will be evaluated:

i. The quantity of hazardous substance stored on the site

ii. The quantity of release of hazardous substance, the extent of consequences to the human life

iii. The action taken by the defaulting party to mitigate the risks of the accident

iv. The size of the population living nearby and the age and susceptibility of the population to the accident.

v. The extent to which the hazardous substances has escaped from boundaries of the company and how far geographically it has travelled

INTERNATIONAL OBLIGATIONS OF SOUTH KOREA

South Korea as a member of the International Labor Organization (ILO) from December 1991 has since then, ratified many of the Conventions and protocols, one amongst the first ones is the ILO Code of Practice for Major Industrial Accidents. South Korea has also been associated with the OECD since December 1996. The second edition of Guiding Principles for Chemical Accidents, Prevention, Preparedness and Response attracted South Korea, which ratified the same in the year 2003. In October 1996 South Korea was invited to join UNEP. In furtherance to the Sendai Framework for Disaster Risk Reduction, the UNEP framed the APELL (II Edition) to which South Korea is a party. The Republic of South Korea also ratified the Rotterdam Convention in February,2004.

1.5.7 **Role of Customary Principles of International Law**

Customary international law (CIL) is an integral component of the international law. CIL refers to obligations which arise out of established international practice rather than under the written conventions and the treaties.[163] CIL arise out of the consistent practices which the states follow out of their perceived sense of legal obligation. One of the examples of such custom is "law of diplomatic immunities". Before the enactment of the Vienna Convention on Diplomatic relations, the immunities on the diplomatic were considered a part of the custom.[164] The state considered that this custom "ought" to be followed even if they consider it unpopular or inconvenient.[165] CIL mainly consists of two components: (a) a general practice and (b) acceptance of such practice as law (opinion Juris). Therefore, to identify whether a particular exercise is customary International law or not, said practice must have been accepted as part of the law or is expressed in the country as part of legal right and obligation. And if it is not established as a general practice, it cannot be considered as customary international practice. Therefore, the test is- is there a general practice that is accepted as law?[166]

[163] Malcolm N. Shaw, *International Law* 80 (5th edn, Cambridge University Press 2003)
[164]Roozbeh (Rudy) B. Baker, 'Customary International Law in the 21st Century: Old Challenges and New Debates' (2010) 21 EJIL 173–204 <https://academic.oup.com/ejil/article/21/1/173/363352> accessed 15 May 2020
[165] Daniel M. Bodansky, 'The Concept of Customary International Law' (1995) 16 MJIL <https://repository.law.umich.edu/cgi/viewcontent.cgi?article=1535&context=mjil> accessed 18 May 2020
[166] ILC, 'Draft conclusions on identification of customary international law, with commentaries' UN Doc A/73/10

To determine whether a particular is part of the international customary law, due consideration must be given to the nature of the rule, its overall context and the circumstances in which the evidence of the rule is found. The examples of the state practices can be located in judgments of the national courts, legislation of the states and the statements made by the state.[167] The practice sought to be classified as CIL must be known to the other states since a confidential conduct of practice by the state would be against the idea of it being considered opinion Juris.[168]

Even the practices adopted by the international organizations in context to international relations can be counted towards CIL subject to the conditions that- (a) firstly the subject matter of such rules must fall within the mandate of international organization and (b) secondly, such rules must be addressed specifically to them.[169]

1.5.7.1 Erga Omnes Obligations:

The concept of *erga omnes* in the International law refers to the predetermined set of obligations which a state has towards the international community at large. The term "erga omnes" literally means an obligation towards everyone. The ICJ has said that considering the importance of the rights involved, all states have an interest in protecting such rights. One of the key features of the *Erga omnes* obligations is that all states have substantial interest involved in protecting such rights as it involves protection of not only rights of the state but of the international community. In case a state acts in breach of its *erga omnes* obligation, all the other states even if not impacted by the breach are entitled to claim performance of the obligation in interest of the state or cessation (ending) of the internationally wrongful act.[170]

The concept of *erga omnes* is very crucial since it can give liberty to International court of justice to go even beyond the terms states have consented to and thus helps in making the state accountable for the acts of genocide, slavery, racial discrimination and acts of aggression.[171] The ICJ had also said that the right to self-determination of a state has erga omnes character and therefore every state must respect and promote the right to self-determination for the original inhabitants of the

[167] *Jurisdictional Immunities of the State (Germany v. Italy: Greece intervening)*, [2012] ICJ Rep 99, 122–123, para 55.
[168] ILC, 'Draft conclusions on identification of customary international law, with commentaries' UN Doc A/73/10.
[169] Ibid
[170] Institutde droit International 'Obligations and rights ergaomnes in international law' (Krakow, 27 Aug 2205)
[171] *Barcelona Traction, Light and Power Company, Limited (Belgium v Spain)* [1970] ICJ Rep 3, para 33.

place.[172] The character of the erga omnes obligation allows the states to invoke peaceful countermeasures to prevent or mitigate early stage genocide or racial discriminations (mass atrocities) in another state as the obligation is towards the entire international community thought he force to be used in such countermeasures should not be beyond UN charter.

1.6 STATE RESPONSIBILITY FOR CHEMICAL ACCIDENTS IN CASE OF TRANSNATIONAL CORPORATIONS

Under International law, a State bears a responsibility for its conduct in breach of its international obligations. The obligations under international environmental law may exist as *erga omnes* obligations.[173]Biodiversity and the global climate are non-renewable resources of the international community of states.[174] The preservation of biological diversity and the global climate are not issues for any one State alone but are rather the concern of all those acting in trust for future generations.[175] In *Gabčíkovo*v-*Nagymaros,* Judge Weeramantry stated that: *"There is substantial evidence to suggest that the general protection of the environment beyond national jurisdiction has been received as obligations erga omnes."*[176]Further, the ICJ in its Advisory Opinion stated that: *"the existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond National Control is now a part of the corpus of Int'l Law relating to the environment."*[177]

Failure to comply with an International obligation constitutes an International wrong, thereby causing a flow of certain legal consequences, such as that of making Reparation. The Sovereignty of a state, affords it no basis for denying that responsibility. The principles of Strict liability principle establishes liability for harm caused by abnormally dangerous activities on the original state irrespective of fault or ownership.[178] However, the disjunction between strict liability and states' interests precludes an international consensus for strict liability as such an automatic right

[172] Antoni Pigrau, 'Reflections on the effectiveness of peremptory norms and ergaomnes obligations before international tribunals' (31 Jan 2019) <http://www.qil-qdi.org/reflections-on-the-effectiveness-of-peremptory-norms-and-erga-omnes-obligations-before-international-tribunals-regarding-the-request-for-an-advisory-opinion-from-the-international-court-of-justice-on/> accessed15 May 2020

[173] *Case concerning the Gabcikovo-Nagymaros Project* (*Hungary* v. *Slovakia*.) (Separate opinion of Judge Weeramantry) [2010] ICJ Rep 7, para 117

[174] Patricia W. Birnie et al, *International Law & the Environment* (3rd edn, 2009), 147.

[175] Stockholm Declaration (n 153) Principle 2

[176][1997] ICJ Rep 7 at 156

[177]*Legality of the Threat or Use of Nuclear Weapons* (Advisory Opinion) [1996] ICJ Rep 226, para 29.

[178]John Kelson, *'State Responsibility and Abnormally Dangerous Activities'*, (1972) 13 HARV.INT'L.L.J. 197, , 200.

ignores the special geographical situation in certain countries due to which harm may be caused, for example: the up-stream State would have to continually pay compensation for the exclusive benefit of the downstream State.[179] It has been criticised that strict liability is anathema to developing countries as they often lack the information needed to predict the extent of transnational harm that will result from domestic activities, especially the activities of foreign entities upon whom these states often rely for economic development.[180]

THRESHHOLD OF SIGNIFICANT HARM

There are no agreed International standards that establish a threshold for environmental damage,[181] but it is commonly believed that since all human activity alters the environment, it is necessary to determine a proper standard for inclusion of transboundary harm.[182] The International Law Commission has recognized the threshold as "significant" and emphasized that the harm must lead to a real detrimental effect.[183] State practice, decisions of international tribunals[184] suggest, this damage must be 'significant' or 'substantial' i.e. it must cause 'irreparable damage' or 'substantially prejudice' the interest of another state.[185] An International wrong occurs where an International person acts in violation of an International legal duty. The obligation not to cause transboundary harm has been acknowledged as customary international law.[186] To constitute a violation of this rule, not only a physical relationship between the activity concerned and the damage caused needs to be established,[187] but the threshold of the harm caused which allows claims to be brought also should

[179]Dupuy, *International Liability for Transfrontier Pollution*, Trends in Environmental Policy and Law (M. Bothe edn., 1980) 363-369

[180]Magraw, *'The International Law Commission's Study of International Liability for Non-prohibited Acts as It Relates to Developing States'* (1986) 61 Wash.L.Rev. 1041; Robinson, *Problems of Definition and Scope*, in LAW, INSTITUTIONS AND THE GLOBAL ENVIRONMENT (1972) 48-49.

[181] Philippe Sands, *Principles of International Environmental Law* (2nd edn, Cambridge University Press 2003)878; *The Trail Smelter Arbitration*(*U.S.* v. *Canada*) (1949)3 R.I.A.A. 1905

[182]Alexandre Kiss & Dinah Shelton, *International Environmental Law* (2nd edn, Transnational Publishers Inc. 2000) 269.

[183]ILC, 'Report of the Commission to the General Assembly on the work of its 56th Session' UN Doc A/59/10, 152.

[184] *Nuclear Tests (New Zealand v. France),* [1974] ICJ Rep 457

[185]Ulrich Beyerlin, Thilo Marauhn, *'International Environment Law*' (Bloomsbury Academic, 2011) 87.

[186]*Nuclear Weapons case* (n 184)*;* Rio Declaration (n 153); The Convention on Biological Diversity (adopted 5 June 1992, entered into force 29 Dec 1993) 1760 U.N.T.S. 69 Principle 3; *The Trail Smelter Arbitral Decision* (*U.S.A* v. *Canada.*)3 R.I.A.A. 1965.

[187]Xue Hanqin, *'Transboundary Damage in International Law'* (Cambridge University Press, 2003) 164.

reach the standard of "significant".[188] Even if, transboundary harm exists, the inobservance of the due diligence obligation on the part of the accused State must be established.[189]

Further, the transboundary harm caused to the affected State must be significant[190] to incur state responsibility. Significant harm must be more than detectable or trivial, but need not be substantial or serious and must also be capable of being measured by objective standards. An illustration of liability for significant transboundary harm caused is the economic loss resulting from the damage caused by sulphur dioxide fumes to agriculture and industry of the claimant in the Trail Smelter case.[191]

States are required to prevent transboundary harm by observing due diligence in their actions.[192] Due diligence in preventing transboundary harm requires providing proper legal and material infrastructure to ensure compliance with the duty to prevent transboundary harm.[193]Due diligence leaves room for States to determine which measures are necessary, appropriate, feasible and available within their capacities to achieve the given objective.[194] The test of due diligence was applied by this Hon'ble Court in the *Pulp Mills Case*.[195] This test does not intend to guarantee that significant harm is totally prevented, but only that the State concerned exerts its best possible efforts to minimize the risk.

A further extension of this principle, to acts of Transnational Corporation is still a nascent issue and requires deliberation. However, the underlying principles of International Law, which form *jus cogens*, act as a guiding light for pinning of liability therein on States for acts of Transnational Corporations.

[188]ILC, 'Report of the Commission to the General Assembly on the work of its 56th Session' UN Doc A/59/10, 150-151.
[189] *Pulp Mills in the River Uruguay* (*Argentina v. Uruguay*.), [2010] ICJ Rep 14, para 55-56.
[190]International Law Commission, *Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries*, [2001] 2 Y.B. Int'l L. Comm'n 146.
[191]*The Trail Smelter Arbitration*(*U.S.* v. *Canada*) (1949) 3 R.I.A.A. 1905
[192]Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities, Report of the ILC (2001) GAOR A/56/10.
[193] H. Xue, citing P. Dupuy, *"Due Diligence in the International Law of Liability,"* in *OECD Legal Aspects of Transfrontier Pollution*, ed. OECD (Paris, 1977)
[194]Hanqin (n 187) 4
[195] *Pulp Mills in the River Uruguay* (*Argentina* v. *Uruguay*.) [2010] ICJ Rep 14.

1.6.1.1 Principle of Notional Nationality

International law has developed rules to determine the nationality of corporations[196]. States are entitled to regulate the activities of companies incorporated under their laws on the basis of the nationality principle. However, states do not as general rule prescribe laws for foreign subsidiaries of locally incorporated parent companies. The US position as set out in the American Law Institute's 1987 Third Restatement on Foreign Relations Law[197] (the US Third Restatement), is as follows: "*a state may not ordinarily regulate activities of corporations organised under the laws of foreign state on the basis that they are owned and controlled by the nationals of the regulating state. However, it may not be unreasonable for the State to exercise jurisdiction for limited purposes with respect to activities of affiliated foreign entities:*

(a) By direction to the parent corporation in respect of such matters as uniform accounting, disclosure to investors, or preparation of consolidated tax returns of multinational enterprises, or

(b) By direction wither the parent or the subsidiary in exceptional cases depending on all relevant factors, including the extent to which

(i) The regulation is essential to implementation of a program to further a major national interest of the state exercising the jurisdiction

(ii) The national program of which the regulation is a part can be carried out effectively can be carried out only if it is applied to foreign subsidiaries.

(iii) The regulation conflicts or is unlikely to conflict with the law or policy of the state where the subsidiary is established.

(c) In the exceptional cases referred to in paragraph (b) the burden of establishing reasonableness is heavier when the direction is issued to the foreign subsidiary than when it is issued to Parent Corporation."[198]

There have been instances where a subsidiary has been treated as a notional alter ego of the Foreign Parent Company, so that the jurisdiction may be exercised over the Parent Corporation by the State where the subsidiary is located.[199] This principle is extended as a result of the doctrine of 'single

[196] *Barcelona Traction Light & Power Company Limited* [1970] ICJ Rep 3 para 70.
[197] '*Restatement of the Law Third, The Foreign Relations Law of United States'* (ALI 1987) para. 213.
[198] Ibid, para. 414.
[199] *Imperial Chemical Industries Ltd. v. EC Commission* [1972] CMLR 557, 629

enterprise' of the nationality of related TNCs, therefore disregarding the concept of separate identity of each member corporation of an integrated group of corporations.[200]

Parent based extra-territorial regulation involves subjecting foreign subsidiaries to extra territorial regulation by the home state through the parent. For example, the parent can be placed under a legal obligation to ensure that a subsidiary follows a certain course of conduct which can then be enforced against the parent company. While seemingly less contentious, parent-based extra territorial regulation through the parent company is also capable of creating tensions between companies and between states.

1.6.1.2 The Territorial principle and the Effects Doctrine

Each state has the jurisdiction to regulate activities taking place within its territorial boundaries. This principle has been extended under the doctrines of subjective and objective territoriality to give states a degree of extra territorial jurisdiction over criminal offences that have been commenced in one jurisdiction and concluded in another. For instance, a state may legitimately claim jurisdictions over criminal activity that was planned or directed from that jurisdiction, notwithstanding that the offences were completed elsewhere.[201] The USA has developed the idea of extended territoriality even further, asserting extra territorial jurisdiction over activities taking place overseas merely on the basis that those activities produced prohibited effects within the USA.[202] According to the US Third Restatement a state has jurisdiction to prescribe law with respect to conduct outside its territory that has or is intended to have substantial effect within its territory.[203]

1.6.1.3 The Doctrine of Horizontality

The States have a duty to protect the cultural, economic and social rights of its citizens. Considering this, a novel concept emerges in the form of Doctrine of Horizontality in which the States can be pinned liability in international law for any action violating the human rights of an individual by private entities including TNC's &MNC's that fall in the purview of the State's jurisdiction. The Doctrine is also called the vicarious, indirect or subsidiary human rights liability

[200] J.G. Starke, *Introduction to International Law* (10th edn, Butterworth & Company, 1989), 208
[201] UK Criminal Justice (Terrorism and Conspiracy) Act 1998, § 5.
[202] *US v. Alcoa* (1945) 148 F 2d 416 (2nd Cir. 1945), 443.
[203] US Third Restatement, para. 402.

by scholars. [204] Doctrine of Horizontality does not require the States to commit or acquiesce to the violation or breach. [205]

The development of notion of horizontality is a notable novelty in International law. What some scholars call the horizontal application of International human rights-and others vicarious, indirect or subsidiary human rights liability- "has the effect of imposing responsibilities on States for the actions of those within their jurisdiction, such that the State can be held liable in International law for human rights violations perpetrated by private entities, including corporations."[206]

1.7 THE WAY FORWARD

Given that the *LG Polymers,* is a group subsidiary of the renowned Transnational Corporation (TNC), there exists an international obligation for respective States to prevent transboundary harm from being caused by actions of Nationals. The Responsibility for acts of TNCs has brought forth and imperative change in the *jurisprudentia* of liability. Several principles have been evolved and can be looked into to arrive at a viable solution so as to the fastening of responsibility, either on the TNCs themselves or the States to which they belong thereto.

The dilemma of holding States liable in the era of Globalisation for lawful acts by MNCs/TNCs is a perpetual debate. However doctrines such as the doctrine of Notional Nationality which allow States to regulate, if not all, at least limited activities of subsidiary companies in foreign states; the Territorial principle and Effects Doctrine that grants States extra-territorial jurisdictional powers where the State can regulate activities of subsidiary companies; and the Doctrine of Horizontality through which States can be held liable for acts of companies within their jurisdiction, all provide viable solutions for the existing, locked debate. It is thus disputable whether corporations as distinct entities can be held liability for the acts performed by them, the State in which the

[204]Analía Marsella Sende, 'The Responsibilities of States for Actions of Transnational Corporations Affecting Social and Economic Rights: A Comparative Analysis of the Duty to Protect', (2009) 15 Colum. J. Eur. L. F. 33 <http://www.cjel.net/online/15_2-marsella-sende/> accessed 18 May 2020.

[205]'Implementation of Human Rights' <http://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&cad=rja&uact=8&ved=0CFYQFjAF&url=http%3A%2F%2Fwww.hrlrc.org.au%2Ffiles%2Frevised-ch-3-implementation-of-human-rights.doc&ei=REJBU7GONOLIiAei4oCICg&usg=AFQjCNE6VHufx52QMwXxxGXodrlPkSBbRA&bvm=bv.64125504,d.aGc> accessed 18 May 2020.

[206] David Kinley and Sarah Joseph, *Multinational Corporations and Human Rights: Questions about their Relationship: A New Research Project Studying the Evolving Legal and Human Rights Responsibilities of Corporations*(2002) 27 ALT. L.J.7,8

companies are incorporated may also be held liable and responsible to its people and a further reasoning could be to hold States responsible in which the parent company is situated.

In so far as the liability of the company under the domestic laws is concerned, it can be held liable both under civil law and criminal law. Under the Public Liability Insurance Act, 1991, which is primarily a civil law, the company could be asked to recompense the victims for the harm suffered. Additionally, the NGT has imposed an interim fine of rupees 50 crores. However, one could only hope that the judiciary and the executive would not suffer from a rerun of the prosecution in the Bhopal's legal chronology during the prosecution in the LG Polymers case. The company could also be held guilty of criminal negligence. Criminal negligence can be defined as gross and culpable failure or negligence to exercise proper and reasonable care or precaution to protect the public in general or individuals, against injury where it was or is the duty of that person, natural or juridical to exercise such reasonable care or precaution.[207] In the present context, criminal negligence can also extend to the protection of the environment because of the inextricable relationship between criminal and environmental law.[208] The Gopalapatnam police station based on a complaint filed by the Village Revenue Officer of the adjacent village, has filed an FIR against the management of LG Polymers under the following Sections of the Indian Penal Code (IPC) on 7th May 2020:[209]

- Section 278 – Making atmosphere noxious to health
- Section 284 – Negligent conduct with respect to poisonous substance
- Section 285 – negligent conduct with respect to fire or combustible matter
- Section 337 – Causing hurt by act endangering life or personal safety of others
- Section 338 – Causing grievous hurt by act endangering life or personal safety of others
- Section 304A – Causing death by negligence

[207] *Bharatbhai Harivadan Parmar v. State of Gujarat & Ors*., Criminal Miscellaneous Application No. 7312 of 2006 dated 31 October 2015, <https://indiankanoon.org/doc/49033176/>.
[208] Dr. Virender Sindhu, "Environmental Crimes: An Analysis", *International Journal of Advanced Education Research*, Volume 3, Issue 1, (January 2018), pp. 274-282, ISSN: 2455-6157.
[209] "FIR filed against LG Polymers for ignoring safety protocols", The Hindu Business Line, available at https://www.thehindubusinessline.com/news/fir-filed-against-lg-polymers-for-ignoring-safety-protocols/article31528582.ece *See* also Newsmeter Network, "Vizag Gas Leak: Criminal Case Booked Against LG Polymers India", *Newsmeter*, (07 May 2020), <https://newsmeter.in/vizag-gas-leak-criminal-case-against-lg-polymers-india/>.

Section 278 of IPC punishes the act of making the atmosphere of any place noxious to the health of persons and punishes the act by prescribing a fine not exceeding INR 500. Section 284 punishes negligence in respect of poisonous substances by prescribing imprisonment extending to 6 months or fine not exceeding rupees 1,000 or both. Section 285 punishes negligence in respect of fire and combustible matter by prescribing imprisonment extending to 6 months or fine not exceeding rupees 1,000 or both. Section 337 punishes an act that causes hurt which endangers human life or personal safety by prescribing imprisonment extending to 6 months or fine not exceeding rupees 500 or both. Section 338 punishes persons responsible for causing grievous hurt negligently or rashly that endangers human life, or personal safety of others with imprisonment of either description for a term which may extend to two years, or with fine which may extend to one thousand rupees, or with both. Section 304A punishes persons responsible for causing death by any rash or negligent act with imprisonment of either description for a term which may extend to two years, or with fine, or with both.

The Bhopal gas leak case offers lessons with regard to criminal liability against the corporations and its executives. The criminal case was first initiated in 1989 and a verdict was given in June 2010 where the Union Carbide Company along with its executives were found to be criminally negligent and the company was fined to the tune of 5 lakh rupees and the individuals were fined 1 lakh rupees each along with a prison sentence of two years. In the same year the Central Bureau of Investigation (CBI) had appealed to the Supreme Court for harsher punishment for the executives and to reinstate the earlier of charge of 304 IPC instead of 304A of IPC as reduced in the 1996 Court proceedings which was rejected by the Supreme Court in 2011. If the same principles are applied to the case of LG Polymers, the officials of the company could be indicted for criminal negligence.

While the amount of fine prescribed under the Indian Penal Code seems insubstantial, if the company is found guilty under the Environment (Protection) Act, 1986 for failing to comply with the Rules framed under it such as Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 or the Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016, its officers could be imprisoned for a period of 5 years or it could be imposed a fine which extends upto rupees 1 lakh.

If the rights of the victims of the gas leak are viewed through a constitutional lens, one may also argue that they have been deprived of their *right to health* which has been read into the right to life and personal liberty enshrined under Article 21 of the Constitution. One of the first cases to speak about the right to health to be subsumed within the right to life in India was *Bandhua Mukti Morcha* v. *Union of India*[210] where the Indian Supreme Court held that held that the right to live with human dignity enshrined in Article 21 derives its life breath from the Directive Principles of State Policy and particularly clauses (e) and (f) of Article 39 and Article 41 and 42 and at the least, therefore, it must include protection of the health and strength of workers men and women, and of the tender age of children against abuse, opportunities and facilities for children to develop in healthy manner and in conditions of freedom and dignity, educational facilities, just and humane conditions of work and maternity relief. There have been other decisions of the Higher Judiciary which have upheld the right to health of individuals and the right to live in a healthy environment. The Supreme Court of India in *Virendra Gaur* v. *State of Haryana*[211] has held that the right to lead a healthy life is dependent upon the right to a safe environment and has affirmed that it flows out of the wide embracing scope of Article 21 of the Indian Constitution.

In a few cases, courts have awarded compensation for the violation of right to health by hazardous or noxious chemicals. For instance, in *Democratic Youth Federation of India* v. *Union of India & Ors*,[212] the Supreme Court directed Kerala State Governments to pay INR 5 lakhs each, to all affected persons within a span of 3 months and also directed the State Governments to provide life- long medical facilities and treatment for affected persons in pursuance of the rights under Article 21 of the Constitution. This compensation was awarded to provide reparation from the persons who were affected by the hazards of the pesticide endosulfan which was used widely on crops like cashew, cotton, tea, paddy, fruits and others until 2011, when the Supreme Court banned its production and distribution. The Court further directed the State Governments to recover the compensation either from the concerned industry or from the Government of India in case it is

[210] AIR 1984 SC 802
[211] *Virendra Gaur* v. *State of Haryana*, (1995) 2 SCC 577.
[212] *Democratic Youth Federation of India* v. *Union of India & Ors.*, Writ Petition (Civil) No. 213 of 2011 dated 30/01/2017 (Interim Order), <http://www.indiaenvironmentportal.org.in/files/endosulfan%20Kerala%20Supreme%20Court%20Order%20compensation.pdf>.

open to the State Governments to make such recovery, in consonance with law. In *Mangesh Salodkar* v. *Monsanto Chemicals of India Ltd.*[213] the petitioner, an employee of the company in its Lonavala plant had suffered a brain hemorrhage and was reduced to a vegetative state. In his petition filed under Article 226 of the Constitution before the Bombay High Court, he had contended that the operation and working of Monsanto's plants is so hazardous that healthy employees in the productive age group like him have been afflicted with lifelong diseases. The Bombay High Court affirmed the right to health of workers under Article 21 of the Constitution who work in industries manufacturing hazardous chemicals and since the company was willing to pay an amount of INR 6.70 lakhs to 14 ex- employees and INR 17.80 lakhs to the Petitioner, the Court oversaw the disbursement of the respective compensation amounts and held that the compensation amount should also be exempted from Income Tax Act, 1961. In light of the aforementioned judgements, compensation may also be granted to the victims of styrene gas leak for the violation of their right to health.

Another important principle of environmental law that could find a mention in the LG Polymer case and could be applied is the *Polluter Pays Principle* which is a widely accepted principle in many legal jurisdictions of the world. The principle states that the costs of pollution, prevention and control measures have to be borne by the polluter.[214] The Supreme Court has applied the principle time and again to safeguard the interests of the victims and the environment from pollution caused by hazardous industries. The principle was applied indirectly by the Supreme Court in the Oleum gas leak case[215] where it had hinted at the need of developing a new principle for holding hazardous industries liable. The Court had stressed upon the need to "*evolve new principles and lay down new norms which would adequately deal with the new problems which arise in a highly industrialised economy. If it is found that it is necessary to construct a new principle of law to deal with-an unusual situation which has arisen and which is likely to arise in future on account of hazardous or inherently dangerous industries which are concommitant*

[213] *Mangesh Salodkar* v. *Monsanto Chemicals of India Ltd*., Writ Petition No. 2820 of 2003 dated 13 July 2006 (Bom).
[214] Environment Directorate, "The Polluter Pays Principle: OECD Analyses and Recommendations", *OCDE/GD(92)81*, (1992), <http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=OCDE/GD(92)81&docLanguage=En>.
[215] *M.C. Mehta* v. *Union of India & Ors*., (1987) SCR (1) 819

to an industrial economy the Court should not hesitate to evolve such principles of liability merely because it has not been so done in England."

The Polluter Pays Principle was applied for the first time in *Indian Council for Enviro-Legal Action v. Union of India*[216] popularly referred to as the Bichhari Case where 5 chemical industries that were producing the H- Acid were disposing off the untreated waste of the chemical in an unsustainable manner resulting to severe impacts on the environment and public health. Although 4 crores were directed to be paid by the industries for restoring the devastation caused on the environment, no compensation was awarded to the villagers living in the vicinity. The principle was also applied in *Vellore Citizens Welfare Forum* v. *Union of India*[217] to impose a penalty of rupees 10,000 each on 550 tanneries for discharging untreated wastes and effluents that were resulting in water and land pollution in the nearby vicinity and posing a threat to public health. In *M.C. Mehta v. Union of India*[218] popularly referred to as the Taj Trapezium Case, the polluter pays principle was used to grant compensation under the Industrial Disputes Act, 1947 in addition to six years of wages of the workers for closure of hazardous chemical industries in the nearby vicinity of the Taj Mahal and for the purposes of relocation and shift to less hazardous fuels. The polluter pays principle has been utilised for many other instances that are not related to hazardous chemicals too such as the Shrimp Culture Case in 1997[219] and the Volkswagen Case in 2019.[220]

In light of the fact that the Polluters Pay Principle is an established and trite principle for awarding compensation in India, it can certainly be used for awarding compensation for any kind of damage to the ecosystem so that its restoration is ensured, as well as for any kind of damage to public health and persons living in the vicinity when the chemical accident occurred. In consideration of the aforesaid, the right to health under Article 21 of the Constitution and the Polluters Pay Principle can also be applied by the Courts to provide relief to the victims of the LG Polymers Gas Leak and as well as for restoring the damage done to the environment in the plant's vicinity.

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[216] *Indian Council for Enviro-Legal Action* v. *Union of India*, (1996) 2 JT (SC) 196.
[217] *Vellore Citizens Welfare Forum* v. *Union of India*, AIR (1996) SC 2715.
[218] *M.C. Mehta* v. *Union of India*, AIR (1997) SC 734.
[219] *S. Jagannath* v. *Union of India*, AIR (1997) SC 811.
[220] Devika, "NGT: Polluters Pay Principle Does not Mean that Polluter can Pollute and then Pay for it- Must Include Environmental Cost and Direct Cost to People", *SCC Online*, (30 May 2019), <https://www.scconline.com/blog/post/2019/05/30/ngt-volkswagen-emission-scam-polluter-pays-principle-does-not-mean-that-polluter-can-pollute-and-then-pay-for-it-must-include-environmental-cost-and-direct-cost-to-peop/>.