

# FIRECRACKERS: TO BE OR NOT TO BE THAT IS THE QUESTION



**Wednesday Wisdom**  
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## Introduction[1]

“The quality of air we breathe reflects the quality of our lives.” This wise quote holds solid truth that one cannot deny. In a world bustling with noise and smoke where concrete jungles meet endless highways, the importance of a clean and fresh environment has never been more urgent.

Traditionally, festivals irrespective of religions were celebrated by lighting up of lamps, lanterns, candles but since few decades firecrackers have been introduced as a major part of celebrations. While there are multiple contributors to pollute and contaminate the quality of air, one can't turn a blind eye to the sparkling firecrackers since it substantially contributes to the smog and release of harmful gasses and chemicals in creating an alarming situation for breathing and for the environment.

| CITY   | YEAR              | AIR QUALITY INDEX (AQI) |
|--------|-------------------|-------------------------|
| MUMBAI | 2021              | 216                     |
|        | 2022              | 277                     |
|        | 8TH NOVEMBER 2023 | 153                     |
| DELHI  | 2021              | 382                     |
|        | 2020              | 414                     |
|        | 8TH NOVEMBER 2023 | 457                     |

However, in the previous week, Delhi's air quality deteriorated further, skyrocketing to its critical epitome of 468 in some regions of Delhi, due to which even primary schools were shut down for 2 days. It has breached the mark of 400 which stands for “severe level” and amounts to a hazardous condition. This currently recorded severe level of Air Quality in Delhi is a consequence of multiple serious factors, firecrackers not being one of them.

Firecrackers, in India, are subject to specific regulations and laws under the Explosives Act of 1884. The sale, production, and usage of fireworks are governed by the Explosives Rules of 2008. These regulations oversee firecrackers as they fall under the category of low-level explosives, covering their safe handling and responsible use.

This article covers the air and noise pollution related aspect while sharing interesting information on its chemistry, governing laws for use of fireworks, statistics etc.

[1] The article reflects the general work of the authors and the views expressed are personal. No reader should act on any statement contained herein without seeking detailed professional advice.

### How are firecrackers defined?

As per Rule 2 (24) of Explosives Rules 2008,

“fireworks means low hazard explosive comprising of any composition or device manufactured with a view to produce coloured fire or flame, light effect, sound effect, smoke effect (coloured or natural), or combination of such effects and includes fog-signals, fuses, rockets, shells, percussion caps;”

### How are firecrackers classified?

According to Rule 4(3) the fireworks are classified into the following categories depending upon the desired pyrotechnique effect :

|   |                                    |  |
|---|------------------------------------|--|
| 1 | Sound emitting fireworks           | Fireworks with sound level not exceeding 125 dB (A) or 145 dB (C) pk at 4 meters distance from the point of bursting. For individual firecracker constituting the series (joined firecrackers), the above mentioned limit be reduced by $5 \log_{10}(N)$ dB, where N = number of crackers joined together;   |
| 2 | Colour or light emitting fireworks | such fireworks which emit colour or light and having sound level not exceeding 90 dB (A) at 4 m distance from the point of bursting;   |
| 3 | Display Fireworks                  | Any product of fireworks assembled at the site for the purpose of display including shell of diameter exceeding 25 mm, multiple shots or cake products of any diameter exceeding 25 nos. of shots in a product and lance network or other products as approved by the Chief Controller   |
| 4 | Fireworks for export purpose       | Firecrackers for the purpose of export may be manufactured with high sound level or product of such size and design as approved by the Chief Controller subject to following conditions: The manufacturer shall have a valid export order with him; and (b) The sound level for these fire crackers shall conform to the sound level prescribed in the country to which these are intended to be exported. |

### What are the License Requirements regarding firecrackers?

As per the directions issued under Rule 7 of Explosives Rules, 2008, persons involved in the manufacturing, sale, storage, transport, and use of explosives are required to obtain a specific license which are issued by the appropriate authority as per the guidelines outlined in the Explosives Rules, 2008.

Fireworks being low-level explosives fall under this category. Further, as outlined under these rules, any sale of firecrackers shall be from licensed premises only. [2]

However, (i) possession of fireworks not exceeding one hundred kilogram for own use and not for sale (ii) possession and sale from a shop of amorces and sparklers in quantity not exceeding one hundred kilogram along with other related exemptions has been clarified. [3]

[2] Rule 88 of Explosive Rules, 2008

[3] Rule 9 sub rule (5) & (9) of Explosive Rules, 2008

## Which Rules tackle the noise pollution ?

The Noise Pollution Rules 2000 cast restrictions on bursting of sound emitting firecrackers specially in silence zones[4]or during night time[5] i.e between 10 p.m. to 6 a.m. and furthermore the rules also prescribe liability for penalty in case of violation.[6]

Further, the legislation of the Environment (Protection) (Second Amendment) Rules, 2006 has issued a notification under Ministry of Environment And Forests prescribing noise standards for firecrackers. The notification stipulates that:

- The manufacture, sale or use of firecrackers generating noise level exceeding 125 dB(AI) or 145 dB(C)pk at 4 meters distance from the point of bursting shall be prohibited.
- For individual firecracker constituting the series (joined firecrackers), the abovementioned limit be reduced by  $5 \log_{10}(N)$  dB, where N = number of crackers joined together.

## Judicial Intervention to the increasing air pollution due to firecrackers during festive seasons

In a landmark case of Arjun Gopal vs. Union of India[7], the petitions were filed on behalf of 3 infants aging between six months and fourteen-month-old through their fathers concerning the health of their children because of alarming contamination of air quality contributing severe air pollution in the city of Delhi. They emphasized that air pollution hits the peak during Diwali due to indiscriminate use of firecrackers, the chemical and gas emission increases harmful particulate matter (PM) at alarming level. Their prayer included banning the of firecrackers in any form during the festivals or otherwise.

During the course of the case hearing, various suggestions were made by the petitioners out of which the Hon'ble Supreme Court accepted the suggestion wherein the Court passed the order which states:



[4] Rule 3 (5) An area comprising not less than 100 metres around hospitals, educational institutions and courts may be declared (by the State Government) as silence area/zone for the purpose of these rules [The Noise Pollution (Regulation and Control) Rules, 2000]

[5] Rule 5A of Noise Pollution Rules, 2000

[6] Rule 6 of Noise Pollution Rules, 2000

[7] Writ Petition No. 728/2015 (2019) 13 SCC 523

**“... The Union Government and all the State Governments will give wide publicity both in print and Electronic media to the ill effects of fireworks and advise people accordingly. We also direct the Teachers/Lecturers/Assistant Professors/Professors of the Schools and Colleges to educate the students about the ill effects of the fireworks.”[8]**

The Hon'ble Supreme Court identified two Issues:

1. Whether it is necessary to have a full ban on fireworks displays during Diwali, or can they be controlled in a way that does not pollute the air and is least intrusive?
2. If the prohibition on firecrackers violates the businessmen's and merchants' basic rights under Article 19(1)(g) and religious under Article 25, whether such rights override the fundamental right granted under Article 21 of the Constitution of India?

The Court quoted the environmental law's 'precautionary principle' and pronounced that, “this principle did not need exact studies/material. Very word 'precautionary' indicated that, such a measure was taken by way of precaution which could be resorted to even in absence of definite studies.”. The precautionary principle has been established as part of customary international law, even in the absence of definitive investigations, the phrase “precautionary” implies that environmental actions can be done in the form of precautions.

The Court also relied on the Vellore Citizens' Welfare Forum[9] case concerning Article 19(1)(g) i.e. (Right to practice any profession or to carry on any occupation, trade or business) and stated that environmental protection is a component of Article 21 i.e. (Right to Life) and that it must take precedence over the freedom to conduct business stipulated in Article 19(1)(g). It also held that Article 25 (Freedom of practice and propagation of religion) is subject to Article 21 and that if a religious practice endangers people's health or lives, it cannot be protected by Article 25.

During the course of proceedings in this case, the Court had issued multiple orders:

1. use of crackers with reduced emission (improved crackers) and green crackers
2. banning the manufacture, production and sale of joined crackers (series crackers or laris) which causes huge air, noise and solid waste problems.
3. Sale through licensed traders only and such licensed traders are selling those firecrackers which are permitted by this order.
4. No e-commerce websites, including Flipkart, Amazon etc., shall accept any online orders and effect online sales. Any such e-commerce companies found selling crackers online will be hauled up for contempt of court and the Court may also pass, in that eventuality, orders of monetary penalties as well.
5. Barium salts in the fireworks is also hereby banned.
6. On Diwali days or on any other festivals like GURPURAB etc., when such fireworks generally take place, it would strictly be from 8:00 p.m. till 10:00 p.m. only. On Christmas eve and New Year eve, when such fireworks start around midnight, i.e. 12:00 a.m., it would be from 11:55 p.m. till 12:30 a.m. only.
7. The Union of India, Government of NCT of Delhi and the State Governments of the NCR would permit community fire cracking only (for Diwali and other festivals etc. as mentioned above), wherever it can be done.

[8] Para 3 of the case Arjun Gopal and Ors. Vs. Union of India (UOI) and Ors decided on 23.10.2018

[9] 1996 5 SCR 241

In a recent case of Dr. P.G. Najpandy vs Chief Secretary[10], the National Green Tribunal relied on the aforementioned judgment and a direction was issued for restricting use of fire crackers to green crackers in cities/towns where air quality was 'moderate' or below, only for two hours and only during festivals like Diwali, Chatt, New Year/Christmas Eve etc., as may be specified by the concerned State.[11]

The National Green Tribunal in its order further stated that “...In areas, unless covered by the ban or restrictions by the authorities, restrictions on the pattern of those imposed by the Hon'ble Supreme Court vide order dated 23.10.2018, (2019) 13 SCC 523, will apply i.e. only green crackers be sold and use of crackers will be allowed only for two hours during festivals and not on any other day during November 9 to 30.”

Although the National Green Tribunal has issued the directions and orders in this case as mentioned above, the matter is still pending before the tribunal for further proceedings.

### Way forward for Green Crackers

- Green crackers is a revolutionary concept, invented with use of less harmful raw materials, in accordance with instructions issued by the Supreme Court.
- In an order passed by the Government of Karnataka states that "Green Crackers don't contain harmful chemicals, thereby reducing air-pollution due to firecrackers considerably. These crackers are less harmful in comparison to conventional firecrackers. The Green Crackers are manufactured as per the formulation developed by Council of Scientific and Industrial Research- National Environmental and Engineering Research Institute (NEERI) lab (autonomous bodies under Ministry of Science & Technology, Govt. of India) and product approval for new formulation is given by Petroleum and Explosives Safety Organisation (PESO) which is under the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industries, Govt. of India. Green firecrackers are available as sparklers, flowerpots and maroons etc.[12]
- Essentially, these crackers replace certain hazardous agents in traditional crackers with less polluting substances with the aim to reduce the noise intensity and emission of substances responsible for air pollution.
- Most green crackers do not contain barium nitrate and other barium salts, which is responsible for air pollution and considered to be the most dangerous ingredient in conventional crackers.
- According to reports, green crackers cause 30 per cent lesser particulate matter[13] pollution as compared to traditional crackers.
- Regular firecrackers produce 160-200 decibels of sound, while green crackers are limited to about 100-130 decibels.
- The identification of Green Crackers can be done through it's distinct packaging. It can be traced and distinguished by a green logo of CSIR-NEERI and PESO as well as quick response (QR) coding system. This new initiative of QR code is incorporated in order to avoid manufacture and sale of counterfeit products.[14]

[10] Execution Application No. 11/2023(CZ), Original Application No.76/2021(CZ)

[11] Para 10 (1) Dr. P.G. Najpandy vs Chief Secretary on 20 October, 2023

[12] Government of Karnataka order dated 12-11-2020

[13] [https://www.neeri.res.in/abouts/details/green-crackers#googtrans\(en|en\)](https://www.neeri.res.in/abouts/details/green-crackers#googtrans(en|en))

[14] As specified in an order of Govt of Karnataka, dated 12-11-2020

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### Conclusion:

One must remember that this issue cannot be resolved independently by government or judiciary but requires collective steps to be adopted by all the members of the society. The Explosive Rules stipulate monetary penalty and fines on non-compliance of license requirements, however the biggest punishment for using these crackers is the air pollution which is affecting society. The success of these efforts heavily relies on the fine sense of judgment and wise choices made by each individual. It is the citizens of the country who ultimately decide the outcome of the efforts by understanding their civic responsibility and the consequences of their actions.

While it is strongly advised to refrain from bursting firecrackers, should one choose to settle for crackers, then opting for eco-friendly "green" crackers is highly encouraged and it is the need of the hour to address the issue caused by firecrackers.

[14] The image appearing above is taken from the official website of NEERI [https://www.neeri.res.in/abouts/details/green-crackers#gooqtrans\(en|en\)](https://www.neeri.res.in/abouts/details/green-crackers#gooqtrans(en|en))

[15] As specified in an order of Govt of Karnataka, dated 12-11-2020

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