

## **Press Release**

In 2018, Hon'ble Minister of Science & Technology, Govt of India directed CSIR laboratories to develop low-emission firecrackers to cater the requirement of small and medium scale firework industry in India in the backdrop of banning fireworks in India.

In 2019, CSIR-NEERI, Nagpur has developed low emission fireworks with emission reduction of 30% as compared to conventional fireworks. These firecrackers are called as "Green firecrackers". Green firecrackers do not contain banned chemicals such as barium, lead, arsenic, mercury and related chemicals. Since then, CSIR-NEERI continuing to develop fireworks with emissions reductions higher than 30%. As on now, from 30 to 50% emission reductions are achieved. Such reductions are resulted due to fine-tuning of composition, developing new materials as additive to improve the solid-state combustion efficiency during the bursting of firecrackers.

After development including detailed validation for emissions from green firework formulations, CSIR-NEERI given the formulations to firework manufactures by registration. All registered firework manufacturers are capable of manufacturing green fireworks as per the CSIR-NEERI's formulations. Across India, 1,403 firework manufacturers are registered with CSIR-NEERI, and the list of firework manufacturers is displayed on the CSIR-NEERI website for the view of regulators, stakeholders and the public. This list is updated monthly once.

To identify, green firecrackers in the open market the product-specific QR codes to be developed by green firework manufacturers and displayed on firework products. The QR codes are verified by regulatory agencies such as PESO, CPCB and others. The QR codes include regulatory details such as CSIR-NEERI

registration and PESO license. CSIR-NEERI issues registration letters to green firecrackers and not provide any QR/Bar codes on the products.

Under public-private partnership, Ministry of Environment, Forests & Climate Change, CSIR-NEERI and Fireworks Association (TANFAMA) established firework testing facilities for testing purity of raw materials, compositions and emissions (RACE) at two locations, i.e., CSIR-NEERI, Nagpur and CSIR-NEERI, Sivakasi. In these facilities, testing is carried out for emissions (air-particulate matter and gaseous pollutants and noise) during bursting of fireworks, purity of raw materials used in firework formulations, and detection of banned chemicals in products. There are proposal for establishing RACE facility for testing fireworks from few states.

As per the Hon'ble Supreme Court directives, CSIR-NEERI is continuing research on further emission reductions. Currently, joined firecrackers with reduced noise emissions i.e., <125 dBA, are under development.

This press note released in view of the Hon'ble Supreme Court order dated 15.10.2025 on sale and use of green firecrackers in the interest of regulatory agencies, firework manufacturers and public.

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