

# Less Polluting Firecrackers

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CSIR scientists have developed Less Polluting Firecrackers which are not only environment friendly but 15-20 % cheaper than the conventional ones.

These crackers have been named as **safe water releaser (SWAS)**, **safe minimal aluminium (SAFAL)** and **safe thermite cracker (STAR)**.

## **SWAS:**

- It has unique property of releasing water vapour and /or air as dust suppressant and diluent for gaseous emissions and matching performance in sound with conventional crackers.
- SWAS crackers eliminates usage of (KN03) Potassium nitrate and Sulphur with consequent reduction in particulate matter (30-35%) SO<sub>2</sub> and NO<sub>x</sub>. It has matching sound intensity with commercial crackers in the range of 105-110 dBA.
- SWAS has been tested for shelf life upto 3 weeks with consistent performance.

## **SAFAL:**

- It has minimal usage of aluminium (only in flash powder for initiation) with consequent significant reduction in particulate matter (35-40 %) compared to commercial crackers.
- It has matching sound intensity with commercial crackers in the range of 110-115 dBA.

## **STAR:**

- It eliminates usage of KN03 and S with consequent reduction in particulate matter (35-40%), SO<sub>2</sub> and NO<sub>x</sub>.
- It has matching sound intensity with commercial crackers

in the range of 105-110 dBA.