

Which of these carcinogens are generated when red-coloured fireworks detonate?

A. Polychlorinated aromatic compounds

B. Nickel compounds

C. Benzo(a)-pyrene

D. Chromium compounds

Red-burning pyrotechnic flares typically contain metallic fuel as the oxidizer, an organochlorine compound, an organic binder, and sometimes auxiliary chlorine sources. The source of the red colour comes from strontium monochloride, which is produced by burning strontium compounds with polyvinyl chloride. Along with the red colour, mixtures of potentially carcinogenic polychlorinated aromatic compounds are released upon combustion. In order to produce more environmentally-friendly fireworks, scientists have looked to replace polyvinyl chloride with hexamine or 5-amino-1H-tetrazole. The use of these compounds removes chlorine from the system and helps to produce strontium monohydroxide, which also burns red.



More information can be found at:

<http://cen.acs.org/articles/93/web/2015/08/Red-Fireworks-Green.html>

<http://onlinelibrary.wiley.com/doi/10.1002/anie.201505829/epdf>