

Friendlier Fire

By Catherine L. Barker - National Geographic – July 2009

The EPA is worried about fireworks. It's not so much the noise and smoke – it's the toxic chemical that provides the oxygen needed to burn the fuel.

The culprit is perchlorate, and the fear is it could seep into drinking water. Early research suggests it might hinder the thyroid's production of growth hormones, notably in children and pregnant women. "It deserves more study," says EPA spokesman Rick Wilkin.

After a fireworks blast, bits of perchlorate can land in nearby water. Poor cleanup of duds adds to contamination, and perchlorate lingers. In a study of an Oklahoma lake from 2004 to 2006, levels spiked following a fireworks show and took 20 to 80 days to stabilize. Why the range? The warmer the water, the faster the perchlorate dissipated.

Chemists Darren Naud and Mike Hiskey have devised a solution. Most of the fireworks made by their New Mexico company use cleaner burning, nitrate-based oxidants instead of perchlorate. This low-smoke variety is ideal for indoor shows like Cirque du Soleil, but outdoor venues opt for Chinese imports, which are far cheaper. Without laws regulating perchlorate, event planners aren't likely to spend more bucks for their bang.