

PUR
Water
Purifier**Innovator:** Greg Allgood**Safe Water Equation:** smart chemistry + low manufacturing costs + vision = clean water for millions in the developing world and here at home

Even in the United States, people can't always count on clean, safe water gushing out of the faucet. After disasters such as Hurricane Katrina, treatment systems can go down for days or even weeks. Thanks to a team led by Greg Allgood, a Procter & Gamble public-health specialist, Americans now have a ready alternative to stockpiling water or boiling it. It's an inexpensive powder called PUR that is already saving lives in developing countries, where about 1.6 million children die each year from diarrheal diseases.

Procter & Gamble chemists developed the product with cooperation from the Centers for Disease Control and Prevention. The goal was to improve on chlorine water treatment, which kills bacteria and viruses but not parasites such as cryptosporidium and giardia and does nothing to make muddy water look cleaner. The scientists managed to squeeze the multistep process used in large water-treatment plants into a packet of powder that costs pennies to produce. The mixture includes flocculants, which cause suspended solids, heavy metals and parasites to clump together. The resulting "floc" can then be filtered out

with a cotton cloth. Time-released chlorine kills bacteria and viruses. Within 30 minutes, about a teaspoon of the powder can treat 2.5 gal. of water. "The visual improvement is dramatic," says Eric Mintz, chief of the CDC's diarrheal diseases and epidemiology section.

After struggling to make a profit from the powder, P&G planned to stop production. Allgood convinced executives to set up a nonprofit unit for the product instead. Today, he directs the Children's Safe Drinking Water program, which has helped purify more than a billion liters of water in 40-plus countries, with the help of partners such as UNICEF and the World Health Organization. During a visit to POPULAR MECHANICS last winter, Allgood converted a jar of murky liquid containing fecal matter into clear, potable water. (Yes, the editors drank it—after Allgood went first.) "It's a tragedy that 4000 children die every day while waiting for multi-million-dollar water-treatment plants to be built," Allgood says. "With our powder, they get the same quality water, but they can have it now." As of this year, so can North American backpackers, homeowners and emergency responders.