

Search:  **WEB SEARCH**

Home U.S. Business World Entertainment Sports Tech Politics Elections Science Health Most Popular

Science Video Weather News Space & Astronomy Animals & Pets Dinosaurs & Fossils Biotech Energy Environment

Search:  All News  Advanced

# Environmentally Friendly Bombs Planned



## SCIENCE VIDEO



**Has Mars lander found ice?**  
CNN



**'Telectroscope' allows view across the Atlantic**  
AP

» All news video

## YAHOO! NEWS TOPIC PAGES

**NEW!** In-depth coverage on topics such as [climate change](#) and [farming and agriculture](#).



## ELSEWHERE ON THE WEB

**USATODAY.com:** [NASA begins preparing Phoenix to dig on Mars](#)

**Time.com:** [Prozac Over the Counter?](#)

**USATODAY.com:** [Senate to debate bill regulating greenhouse gases](#)

**Charles Q. Choi**  
Special to LiveScience  
[LiveScience.com](#)  
1 hour, 59 minutes ago

New explosives could be more powerful and safer to handle than TNT and other conventional explosives and would also be more environmentally friendly.

TNT, RDX and other explosives commonly used in [military](#) and industrial applications often generate toxic gases upon detonation that pollute the environment. Moreover, the explosives themselves are toxic and can find their way into the environment due to incomplete detonation and as unexploded ordnance. They are also extremely dangerous to handle, as they are highly sensitive to physical shock, such as hard impacts and electric sparks.

To make safer, more environmentally friendly explosives, scientists in Germany turned to a recently explored class of materials called tetrazoles. These derive most of their explosive energy from nitrogen instead of carbon as TNT and others do.

Tiny bombs were made from two promising tetrazoles with the alphabet-soup names of HBT and G2ZT. These materials proved less apt to explode accidentally than conventional explosives.

After the bombs were [detonated in the laboratory](#), G2ZT also proved as powerful than TNT, and HBT more powerful than TNT and comparable to RDX, said researcher Thomas Klapötke, a chemist at the University of Munich in Germany.

In initial experiments, G2ZT and HBT produced fewer toxic byproducts than common explosives. Still, they did generate some dangerous hydrogen cyanide gas. But mixing these compounds with oxidizers not only avoids making [hydrogen cyanide](#), but also improved performance, Klapötke said.

These compounds have great potential, "especially for large caliber [naval and tank guns](#)," Klapötke added.

Klapötke and his colleague Carles Miró Sabate are scheduled to detail their findings in the June 24 issue of the journal *Chemistry of Materials*.

The research was financially supported by the Ludwig-Maximilian University of Munich, the Fonds der Chemischen Industrie, the European Research Office of the U.S. Army Research

## ADVERTISEMENT





ADVERTISEMENT



YAHOO! GREEN



**Free is good**  
How to give and get perfectly good stuff for free, reducing waste.

ASSIGNMENT EARTH



**Planet Profiled**  
Explore the world's wonders and the battle to save them.

MOST POPULAR



**Popular Science**  
The most popular science news stories and photos.

» All Most Popular

Add headlines to your personalized My Yahoo! page (About My Yahoo! and RSS)

Science - LiveScience.com

» More news feeds

NEWS ALERTS

Get an alert when there

Laboratory, the U.S. Army's Armament Research, Development and Engineering Center, and the Bundeswehr Research Institute for Materials, Explosives, Fuels and Lubricants.

- Video: [Bomb Test](#)
- [Navy Tests Incredible Sci-Fi Weapon](#)
- [Top 10 Weapons in History](#)
- Original Story: [Environmentally Friendly Bombs Planned](#)

Visit [LiveScience.com](#) for more daily news, views and scientific inquiry with an original, provocative point of view. LiveScience reports amazing, real world breakthroughs, made simple and stimulating for people on the go. Check out our collection of [Science](#), [Animal and Dinosaur Pictures](#), [Science Videos](#), [Hot Topics](#), [Trivia](#), [Top 10s](#), [Voting](#), [Amazing Images](#), [Reader Favorites](#), and more. Get cool gadgets at the new [LiveScience Store](#), sign up for our free daily email newsletter and check out our [RSS feeds](#) today!

[Email Story](#)   [IM Story](#)   [Printable View](#)   [Yahoo! Buzz](#)

RECOMMEND THIS STORY

Recommend It: Average (2 votes)  
★★★★★ ★   [» Recommended Stories](#)

**Science News**

- [Mars lander completes first day on Red Planet](#) AP
- [China launches second Olympic satellite](#) AP
- [Researchers studying better insect repellants](#) AP
- [Conservative group hits senators on climate bill](#) AP
- [China launches weather satellite for Olympic Games: report](#) AFP

**Most Viewed - Science**

- [Mars lander completes first day on Red Planet](#) AP
- [Orbiter captures Phoenix probe's descent to Mars](#) Reuters
- [Mars Orbiter Catches Snapshot of Phoenix Probe's Landing](#) SPACE.com
- [Heavy pollution warning issued in Beijing](#) Reuters
- [Lexus of space station labs poised for launch](#) AP

**Science Video**

- [Has Mars lander found ice?](#) CNN - Mon May 26, 1:46 PM ET
- [First images from Mars](#) CNN - Mon May 26, 12:46 PM ET
- ['Telectroscope' allows view across the Atlantic](#) AP - Fri May 23, 3:30 PM ET
- [Left Behind at 29,029 Feet](#) ABC News - Sat May 24, 9:02 PM ET

Sponsored Links

( [What's this?](#) )

- [Refinance \\$300,000 for Only \\$965/Month](#)  
\$300,000 Mortgage for only \$965/month. Save \$1,000's - No obligation.  
[www.HomeLoanHelpLine.com](#)
- [Free Credit Report with All 3 Scores](#)  
Free 3-bureau Credit Report – includes Transunion, Equifax, Experian.  
[FreeCreditReportsInstantly.com](#)
- [Refinance and Save \\$1,000S](#)  
\$150,000 Mortgage for \$483/month. Compare up to 4 free quotes.  
[www.pickamortgage.com](#)

are new stories about:

- University of Munich
- LiveScience
- hydrogen cyanide
- Ludwig-Maximilian University of Munich
- hydrogen cyanide gas

[Add Selected Alerts](#)

[» More alerts](#)

Search:  All News  Advanced [Yahoo! - My Yahoo! - Mail](#)

[Home](#) | [U.S](#) | [Business](#) | [World](#) | [Entertainment](#) | [Sports](#) | [Tech](#) | [Politics](#) | [Science](#) | [Health](#) | [Travel](#) | [Most Popular](#) | [Odd News](#) | [Opinion](#)

---

Copyright © 2008 Yahoo All rights reserved. [Copyright/IP Policy](#) | [Terms of Service](#) | [Help](#) | [Feedback](#)  
NOTICE: We collect personal information on this site. To learn more about how we use your information, see our [Privacy Policy](#)