

January 2017 chemistry wordoku

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| T | E | | | | O | | | S |
| | | G | | T | A | | | |
| | | | | M | | O | E | |
| | M | | | | | N | | |
| A | | | | | | | | E |
| | | N | | | | | O | |
| | S | A | | U | | | | |
| | | | A | S | | M | | |
| E | | | M | | | | S | O |

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| A |
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| S |
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| U |

Solve this wordoku in the same way as a sudoku with letters instead of numbers (each of the nine letters in each row, column and nine-square cell). Once solved, one of the overall diagonals can be rearranged into the name of a new element

January 2017 word grid

| | | |
|----|----|----|
| Li | Na | N |
| C | F | O |
| Ti | U | Sm |

Prize entry: Using each element symbol in the grid only once, combine them together to make a single word of 13 letters.

Word.....

Just for fun: Construct as many other words as you can using a minimum of three symbols, and each symbol only once.

5 words: OK
8 words: Good
10+ words: Excellent

Entry form

There are four prize puzzles on this page: crossword (cryptic answers only); wordoku; molecule search; and word grid. For each puzzle, a winner will be selected from all the correct entries received and awarded a £25 book voucher. You can only win one of the individual puzzle prizes each month.

If you submit correct entries for all four prize puzzles you will also be entered into a draw to win this month's grand prize* provided by RSSL:

Gold Level Membership (1 Jan 17 to 31 Dec 17) - Emergency Response Service. Find out more at rsc.li/CWpuzzles

Please enter your details below and either post or email this page with your completed entries to us by **15 January 2017**.

Chemistry World puzzles, Royal Society of Chemistry,
Science Park, Milton Road, Cambridge, CB4 0WF, UK
email chemistryworld@rsc.org

Name

Email

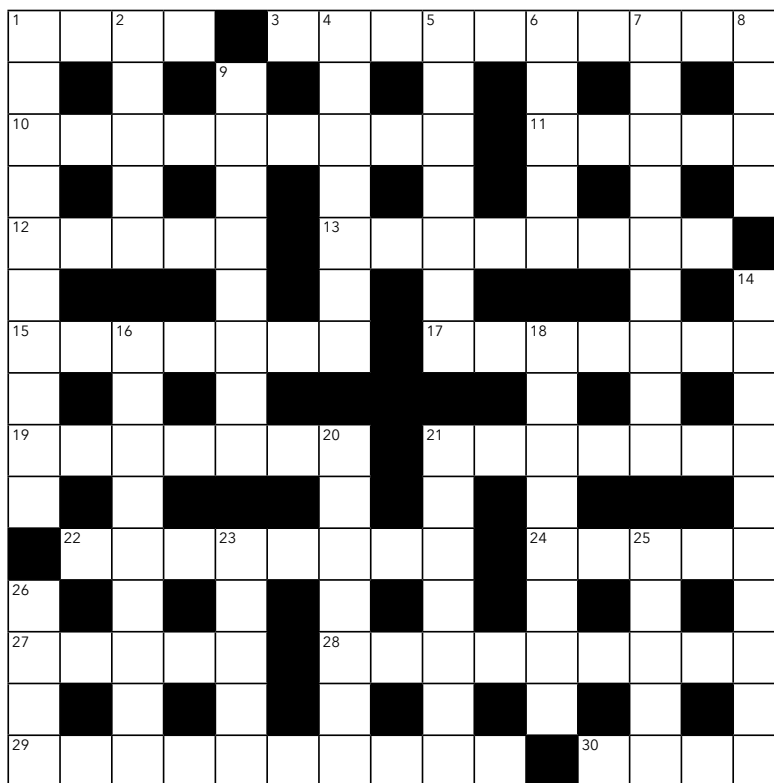
Tel

Participants are advised that any personal information supplied will be processed in connection with this competition and only in accordance with our privacy statement (www.chemistryworld.com/privacy). In order to claim the grand prize, the winner's personal information will be provided to RSSL.

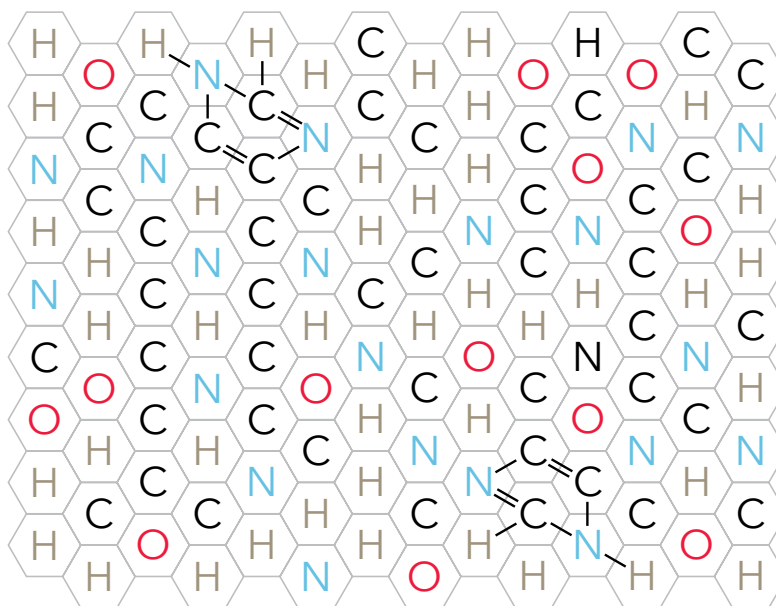
* Limit of one entry per person before the closing date specified. The winner will be randomly selected and will be contacted directly by RSSL. There is no cash alternative to the winning prize.

RSSL may wish to contact you via email with further information about products and services. Please tick the box if you would like to be contacted by RSSL via email and consent to us sharing your contact details with RSSL for this purpose

January 2017 crossword

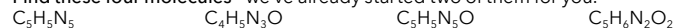


January 2017 molecule search



Connect atoms in adjacent cells using single or multiple bonds to reveal the hidden molecules. The hexagonal grid necessitates some distortion of bond angles - for example in the five-membered rings drawn in as a starting point.

Find these four molecules - we've already started two of them for you.



Clues: All four molecules can be drawn in two (or more) tautomeric forms, and have multiple hydrogen-bond donor and acceptor sites. Three of the molecules contain primary amines.

Cryptic (prize entry)

- Across**
- Lacking time, joust about with spirit (4)
 - Upsetting join is gone with architect (5, 5)
 - I'm unclear about digital (9)
 - Without chromium unclear about bones (5)
 - Has afterthought about fastenings? (5)
 - Spirits love sonatas oddly played (8)
 - Philosopher zips around central Hanoi (7)
 - Robot takes extreme care around this month (7)
 - Right aspect to atomic emissions (7)
 - Oncogene's isolation beginning inside (7)
 - Alloy mug leant to doctor (8)
 - Scent a Romany leaving the Big Apple (5)
 - Police front man stroking without right approval (5)
 - Left Sue playing cello in woody compound (9)
 - Eleven ran around a dale to the city (10)
 - Bird act reportedly (4)

- Down**
- Make hissy teens confused (10)
 - 9 down, 6 down Physicist just adjusted major telescope (5, 8, 5)
 - Heartless Ida flips coins in capital (7)
 - 21 down I upset illegal goalie with genius (7, 7)
 - See 2 down (5)
 - Turned oaten buns into tiny cylinder (9)
 - Got rid of tool store (4)
 - See 2 down (8)
 - Arthropod confused near cactus (10)
 - Strangely I reunited the uneducated (9)
 - Inside mutant a lumpen metal (8)
 - Insect defence neutralised! (7)
 - See 5 down (7)
 - Rock periodical mother follows (5)
 - Three ducks seen in the sea air (5)
 - Areas I adore include the Far East (4)

Quick (just for fun)

- Across**
- Ionic compound (4)
 - Cause of recent epidemic in West Africa (5, 5)
 - Turdus torquatus* (4, 5)
 - Space dog (5)
 - Pertaining to bears (archaic) (5)
 - Skin infection (8)
 - See 2 down (7)
 - Vampire (7)
 - 30 across Analysis for certain heavy metals (7, 4)
 - Mountain building (7)
 - Policeman in Paris (8)
 - Imago (5)
 - Pyromania (5)
 - Extinct arthropod (9)
 - Urania (10)
 - See 19 across (4)

- Down**
- 26 down Cornish chemist (3, 7, 4)
 - 15 across, Double Nobel prizewinner (5, 7)
 - Bombination (7)
 - Pond leaf (4, 3)
 - Grassland (5)
 - Pluviometer (4, 5)
 - Celestial body (4)
 - Emulsions (for example) (8)
 - Chaplin film (4, 6)
 - Cosmic (9)
 - Alligator pears (8)
 - Apostate (7)
 - Monolithic monument (7)
 - Dog down under (5)
 - Waste product (5)
 - See 1 down (4)

Answer to On the spot

Peroxides can undergo self-accelerating thermal decomposition and are kept a low temperature to avoid this. If not controlled the decomposition can be violent, this quantity of organic peroxide has blown the doors off a refrigeration unit before. The building containers could be a sign that decomposition has begun, the best way to tell is use a thermal camera to see if the containers are hotter than their surroundings, your local fire service will have one. Otherwise, they've bulged as they warmed to ambient temperature and are safe to vent. But take care, the containers will be pressurised and may spray out their contents if opened too quickly.

Tom Baker is a senior responder at the National Chemical Emergency Centre

On the spot: a peroxide problem



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December 2016 solutions and winners

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| L | N | A | D | B | M | S | X | E |
| E | B | X | N | S | L | D | A | M |
| S | D | M | A | X | E | L | B | N |
| N | M | B | S | L | D | X | E | A |
| D | E | S | M | A | X | B | N | L |
| X | A | L | E | N | B | M | S | D |
| M | S | N | B | D | A | E | L | X |
| A | X | D | L | E | S | N | M | B |
| B | L | E | X | M | N | A | D | S |

| | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Er | Ra | T | I | C | S | S | Ac | C | H | Ar | I | D | Es |
| N | I | U | H | I | I | O | T | | | | | | |
| S | Ca | T | Te | Rb | Ra | I | Ne | D | P | Lu | N | D | Er |
| T | C | | | Nd | H | P | O | I | | | | | |
| O | P | H | T | H | Al | Mo | Sc | O | P | Y | P | D | F |
| T | | | | Ar | S | U | C | Ho | | | | | |
| T | Ra | In | S | P | O | T | Se | As | H | O | Re | S | |
| O | T | Si | | | | | | | | | | | |
| P | Er | I | C | Ar | P | B | La | C | K | S | Po | T | |
| F | N | H | H | At | K | | | | | | | | S |
| I | O | U | O | Rn | I | T | H | O | S | C | O | P | Y |
| S | N | Rd | Li | B | | | | | | | | | Bi |
| C | O | C | C | I | S | O | U | T | He | Rn | Mo | S | T |
| H | I | S | Ti | N | Ar | Si | | | | | | | S |
| Er | At | O | S | T | He | Ne | S | O | D | Y | S | Se | Y |

The name of the chemist was (lan) BAXENDALE

December winners

- Wordoku**
Winner: P Emslie, Falkirk, UK
Runner up: L Prout, London, UK
- Crossword**
Winner: R Harbridge
Runner up: A Whittam, Milton Keynes, UK

Our new puzzles pages

We know you enjoy our puzzles, so we've expanded them for 2017. We've introduced two new prize puzzles - molecule search and word grid - and, in partnership with RSSL, we're delighted to offer a grand prize for those who complete all four prize puzzles successfully. The grand prize will change each month.

Winners of the January 2017 puzzles will be published in the February 2017 issue of *Chemistry World*.

Visit our website to get our latest puzzles online and find out more about our prizes. rsc.li/CWpuzzles