

November 2017 chemistry wordoku

			E							A
		M		A	R					B
		T		O				M	B	E
O		A	R		M	E				M
	B								N	N
		S	A		N	B				O
M	R			N		O				R
			T	E		N				S
					B					T

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 Scottish materials scientist

November 2017 word grid

P	S	I
Y	Sb	U
C	S	Re

Prize entry: Using each element symbol in the grid only once, combine them together to make a single word of 11 letters.

Word.....

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

6 words: OK
9 words: Good
12+ 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 enter any or all of the prize draws, but each entrant is only eligible to win one of the individual puzzle prizes each month.

Please enter your details below and either post or email this page with your completed entries to us by **20 November 2017**. The winners of this month's puzzles will be published in the December 2017 issue, along with the solutions.

Chemistry World puzzles, Royal Society of Chemistry,
Thomas Graham House, Science Park, Milton Road,
Cambridge, CB4 0WF, UK
Email: chemistryworld@rsc.org

Name

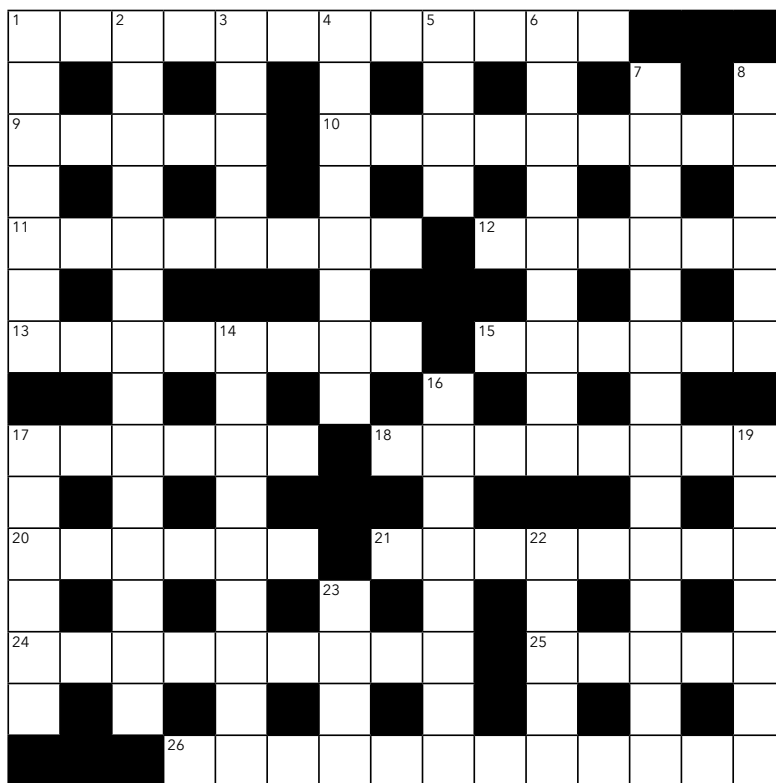
Email

Tel

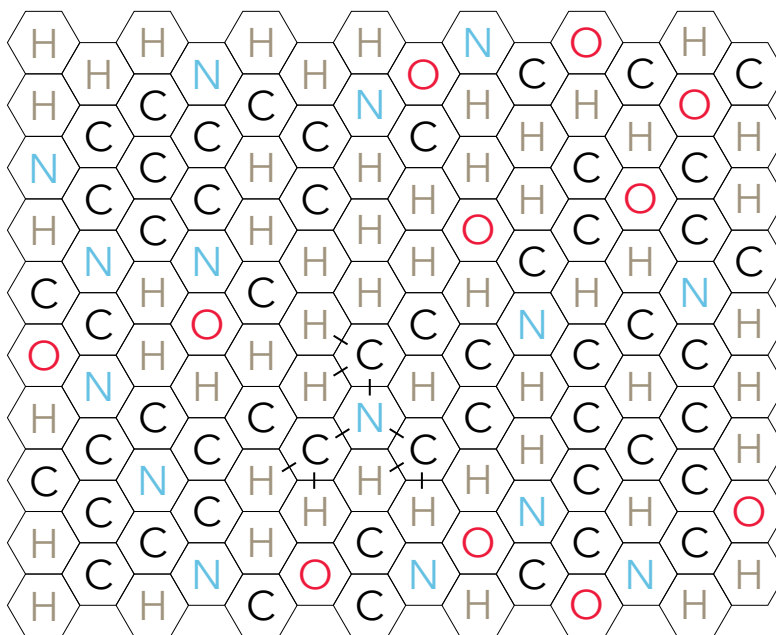
Participants are advised that any personal information supplied will be processed in connection with this competition and only in accordance with our privacy statement (www.chemistryworld.com/privacy).

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

November 2017 crossword

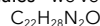


November 2017 molecule search



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

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



Clues: One molecule contains one aromatic ring, the other two. One has a secondary amine, the other an amide.

Cryptic (prize entry)
Across

- Gym equipment left pals over a barrel (8, 4)
- Some of our bankers in town (5)
- 26 Across Septuagenarian mops around mat with disinfectant (9, 12)
- Laughing at Ron and Iris upsetting second violins (8)
- 14 Down Cross dude moody around Irish compound (6, 9)
- Composer confusing whingers (8)
- Right away clamber around settle (6)
- Urge to throw odd Brit into lido? (6)
- Being cross about iodine tinges (8)
- Sore about tin detector (6)
- Lee steps around features of high church (8)
- Cities got surprisingly self-centred (9)
- Additional Artex prepared (5)
- See 10 Across (12)

Quick (just for fun)
Across

- Element named after German city (12)
- Automaton (5)
- See 12 Across (9)
- Metallic element which derives its name from Greek mythology (8)
- 12, 10 Across Russian chemist (6, 9)
- Group of men who held and cultivated small landed estates (8)
- Steps (6)
- Type of land tenure in the feudal system (6)
- Relating to starlings (8)
- Russian currency (6)
- Cheapened (8)
- Medication with formula $C_9H_9Cl_2N_3$ (9)
- Flexible pipes (5)
- American inventor of the light bulb amongst other things (6, 6)

Down

- See 3 Down (5)
- Chemist errs onto ribbon development (6, 8)
- 1 Down Scientist surprisingly nailing lupus (5, 7)
- Over the moon around epic hour (8)
- City initially built around the hill (4)
- Craftsmen putting things away again? (9)
- Adult agilities around plant (9, 5)
- Remove nickel from ammonium compounding plant (6)
- See 12 Across (6)
- Hormone toxicity? Get rid of it with no messing (8)
- Antiseptic pioneer who likes things in order? (6)
- Ruminant about extremely tense stage (7)
- Mean about Eastern purge (5)
- Very small part of wheat omitted (4)

Down

- Main character of *The wizard of Oz* (7)
- Novel by Daniel Defoe (8, 6)
- 17 Down Conifer (5, 6)
- Upper limb protection (8)
- Very small (4)
- Instrument for measuring carbamide in urine (9)
- People who can talk without apparently moving their lips (14)
- Egg-shaped objects (6)
- Tropical fish from South America (9)
- Gets harder to climb (8)
- See 3 Down (6)
- Real surname of Lewis Carroll (7)
- Insect pest (5)
- Thailand (4)

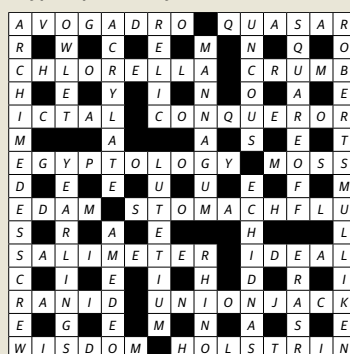
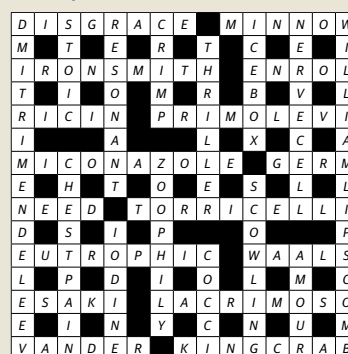
Expert Pharmaceutical Scientific Services
MHRA and FDA Inspected

- Cleaning Validation
- Contamination Identification
- 24/7 Emergency Response Service
- Extractables & Leachables
- GMP Quality Control Analysis
- Method Development & Validation
- Pharmaceutical Microbiology
- Stability Studies
- Consultancy
- Training



Tel: +44 (0)118 918 4076 Email: enquiries@rssl.com

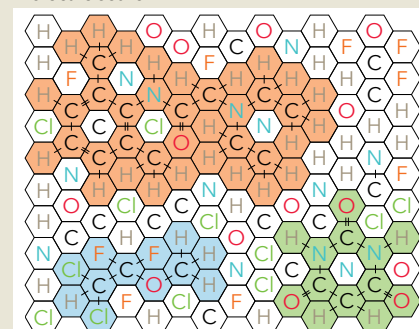
Web: www.rssl.com

October 2017 solutions and winners
Cryptic (prize entry)

Quick (just for fun)

Wordoku

The name of the early chemist was Jöns Jacob BERZELIUS

Word grid

The nine-symbol word was INHOMOGENOUS

Molecule search

October winners
Molecule search

Maria Luiza Bondila, Oxford, UK

Wordoku

Bernard Costello, Dorking, UK

Word grid

Peter Skelly, Bedford, UK

Crossword

John Darby, Dublin, Ireland

The three molecules are anaesthetics and related compounds: lidocaine, methoxyflurane and barbituric acid.

Answer to On the spot

Modern acetylene cylinders will not detonate due to shock alone. Historically there have been explosions as a result of acetylene cylinders being filled to high pressures, but this is no longer done in Europe. Due to concerns regarding safety, acetylene is a very well regulated substance. It is dissolved in acetone and must be stored in extruded cylinders containing a porous mass. The material absorbs the acetylene/acetone mixture and prevents large bubbles building up; if one cavity in the porous material ignites, the mass prevents other cavities igniting. These cylinders have been demonstrated not to fall even when plastic explosives have been detonated on the cylinder's surface. Due to the porous mass and the fact the acetylene is dissolved in acetone, cylinders are kept at around 18bar (as opposed to 200bar for oxygen cylinders). All of these factors in combination help ensure that the chance of catastrophic cylinder failure is minimal.

Tom Johnson is an emergency responder at the National Chemical Emergency Centre

On the spot: Falling cylinder
