Which compounds are aromatic?

1.

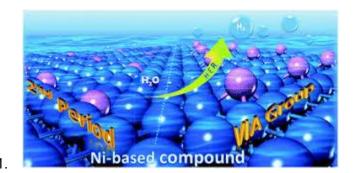
2.

3.

4.

Solution

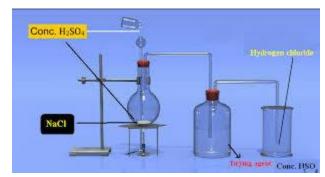
- 1. The compound has a benzene ring (with a chlorine atom substituted for one of the hydrogen atoms); it is aromatic.
- 2. The compound is cyclic, but it does not have a benzene ring; it is not aromatic.
- 3. The compound has a benzene ring (with a propyl group substituted for one of the hydrogen atoms); it is aromatic.
- 4. The compound is cyclic, but it does not have a benzene ring; it is not aromatic.



Uquid Uquid Grain boundaries

Crystals which will from arrains

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3.

Here are 10 numerical properties of the elements in a table format:

Eleme nt	Atomic Numb er	Atomi c Mass	Densit y (g/cm³	Meltin g Point (°C)	Boilin g Point (°C)	Electronega tivity	Ionizati on Energy (kJ/mol)	Atomi c Radiu s (pm)	Oxidati on States
Hydrog en	1	1.008	0.089 9	-259.1 4	-252. 87	2.20	1312	25	-1, +1
Helium	2	4.003	0.178 5	-272.2 0	-268. 93	N/A	2372	31	0
Lithium	3	6.941	0.534	180.5 4	1342	0.98	520	145	+1
Berylliu m	4	9.012	1.85	1287	2470	1.57	900	105	+2
Boron	5	10.81	2.34	2075	4000	2.04	801	85	+3
Carbon	6	12.01	2.26	3500	4827	2.55	1086	70	-4, -3, -2, -1, +1, +2, +3, +4
Nitroge n	7	14.01	0.001 25	-210.0 1	-195. 79	3.04	1402	65	-3, -2, -1, +1, +2, +3, +4, +5
Oxyge n	8	16.00	0.001 43	-218.7 9	-182. 96	3.44	1314	60	-2, -1, +1, +2
Fluorin e	9	19.00	0.001 70	-219.6 7	-188. 12	3.98	1681	50	-1
Neon	10	20.18	0.900 2	-248.5 9	-246. 08	N/A	2081	38	0

Note that these values are approximate and may vary depending on the source. Also, there are many other properties that could be included in a table of elemental properties.