Bromine Water (Br_2/H_2O) Test for Alkenes

The Br_2 molecule is brown in colour. If the brown colour fades to clear, a positive test for the presence of alkenes is indicated. If the brown colour persists, a negative test for the presence of alkenes is indicated.

Compound	Observation	+ or − Test
pentane		
hexane		
1-hexene		
cyclohexane		
cyclohexene		
1-octene		

Oxidation ($KMnO_4/H_2O$) Test for Alkenes

The $KMnO_4$ molecule is purple in colour. If the purple colour changes to any other colour (pink, green, brown...), a positive test for the presence of alkenes is indicated. If the purple colour persists, a negative test for the presence of alkenes is indicated.

Compound	Observation	+ or − Test
pentane		
hexane		
1-hexene		
cyclohexane		
cyclohexene		
1-octene		