

## Answer on Question #44486 – Chemistry – Inorganic Chemistry

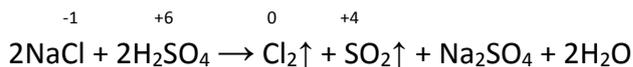
### Question

On addition of concentrated sulphuric acid to chloride salt, colourless fumes are evolved but in case of iodine salt, violet fumes come out. This is because...

### Answer

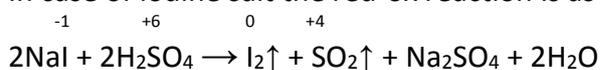
Concentrated sulphuric acid is a strong oxidant, and chlorine and iodine in oxidation state -1 entering into the composition of corresponding salts are reducers.

In case of chloride salt the red-ox reaction is as follows



Two gasses, namely  $\text{Cl}_2$  and  $\text{SO}_4$  are evolved as a result of the red-ox reaction.  $\text{SO}_4$  is colourless and  $\text{Cl}_2$  is pale green. That is why the fumes evolved looks colourless.

In case of iodine salt the red-ox reaction is as follows



Under ambient conditions  $\text{I}_2$  is a solid, but at the elevated temperature it is a violet gas. In given reaction  $\text{I}_2$  is evolved as a violet gas. That is why the violet fumes come out.