

## SULPHUR DIOXIDE

### GENERAL

Sulphur dioxide is a widespread air contaminant, which together with nitrogen oxides, contributes to the formation of acid rain. The primary industrial sources of sulphur dioxide are the combustion of sulphur-containing fossil fuels, such as coal and oil, the refining of copper, iron, lead and zinc ores, and petroleum refining processes. Sulphur dioxide is used to manufacture sodium sulphite and sulphuric acid; for disinfection and fumigation; and as a food additive and preservative. It was formerly used as a refrigerant.

In kraft mills in British Columbia, sulphur dioxide is used for chlorine dioxide generation during the Mathieson process, and to remove residual chlorine in some bleach plants. Sulphur dioxide is a major component of cooking liquor in the sulphite pulping process. In a 1979-1981 survey of seven bleached kraft mills in British Columbia under the Forest Industry Industrial Health Research Program (FIIHRP), sulphur dioxide concentrations were routinely less than 0.1 ppm; the highest concentration detected was 1.3 ppm. Sulphur dioxide concentrations in stack emissions from kraft mills are generally not significant in comparison with the much higher levels of TRS gases.

According to the United States Environmental Protection Agency (EPA), annual average sulphur dioxide concentrations range from 0.004 ppm in rural areas, to more than 0.03 ppm in the most polluted urban industrial areas.