



# Sulphur dioxide

## General information

### Key Points

- Toxic by inhalation, dermal and eye exposure
- Chemical classification: toxic and corrosive
- Inhalation causes irritation to the nose and throat. Exposure to high concentrations causes nausea, vomiting, stomach pain and corrosive damage to the airways and lungs.
- Skin contact causes stinging pain, redness of the skin and blisters
- Eye contact causes watering and in severe cases can cause blindness

### Background

Sulphur dioxide is a colourless gas with an irritating pungent odour. It readily dissolves in water and is one of the main chemicals that causes acid rain.

Sulphur dioxide is a common air pollutant. It is produced naturally by active volcanoes and forest fires. The majority of sulphur dioxide present in the environment is due to the burning of coal and oil at large industrial plants such as oil refineries and power stations. Motor vehicles, domestic boilers and fires also release sulphur dioxide into the environment.



One of the main uses of sulphur dioxide is as a chemical intermediate in the production of sulphuric acid. It is also used as a fumigant, a food preservative and as a bleaching agent. Sulphur dioxide has also been used in the purification of petroleum products.

For the general population, exposure to sulphur dioxide is most likely to occur breathing in air that contains it due to the combustion of fuel for heating and cooking and the use of motor vehicles.

Exposure to sulphur dioxide can occur in the workplace, in industrial facilities such as power plants and refineries or in industries where it is used.

Breathing in sulphur dioxide causes irritation of the nose and throat. Exposure to higher concentrations can cause nausea, vomiting, stomach pain and corrosive damage to the airways and lungs. People with asthma may be more sensitive to the effects of sulphur dioxide.

Skin contact with sulphur dioxide causes stinging pain, redness of the skin and blisters. Skin contact with compressed gas or liquid can cause frostbite.

Eye contact causes watering eyes and, in severe cases, blindness can occur.

Children may be more sensitive to the effects of sulphur dioxide due to their smaller size. It is unknown whether sulphur dioxide causes harm to the unborn child.

Due to the lack of human data and the limited data in animals, the International Agency for Research on Cancer (IARC) determined that it is not known whether sulphur dioxide causes cancer so considered it as not being classifiable.

## Frequently Asked Questions

### *What is sulphur dioxide?*

Sulphur dioxide is colourless gas with an irritating pungent odour. It is a common air pollutant.

### *How does sulphur dioxide get into the environment?*

Sulphur dioxide is released into the environment during the burning of coal and oil. Power plants, oil refineries, some motor vehicles and domestic boilers and fires are all sources of sulphur dioxide. It is also produced naturally by active volcanoes.

### *How will I be exposed to sulphur dioxide?*

The general public can be exposed to sulphur dioxide by breathing in air that contains it. Exposure can also occur in the workplace where it is produced as a by-product during the burning of coal or oil or in industries where it is used.

### *If there is sulphur dioxide in the environment will I have any adverse health effects?*

The presence of sulphur dioxide in the environment does not always lead to exposure. Clearly, in order for it to cause any adverse health effects you must come into contact with it. You may be exposed by breathing, eating, or drinking the substance or by skin contact. Following exposure to any chemical, the adverse health effects you may encounter depend on several factors, including the amount to which you are exposed (dose), the way you are exposed, the duration of exposure, the form of the chemical and if you were exposed to any other chemicals.

Breathing in sulphur dioxide causes irritation to the nose and throat. Exposure to high levels can cause nausea, vomiting, stomach pain and corrosive damage to the airways and lungs.

Skin contact causes stinging pain, redness of the skin and blisters. Skin exposure to compressed gas or liquid can cause frostbite.

Eye contact can cause watering and in severe cases blindness can occur.

Long-term inhalation exposure to sulphur dioxide may cause long-term breathing problems.

### *Can sulphur dioxide cause cancer?*

Due to the lack of human data and the limited data in animals, the International Agency for Research on Cancer (IARC) determined that it is not known whether sulphur dioxide causes cancer so considered it as not being classifiable.

### *Does sulphur dioxide affect children or damage the unborn child?*

There are very limited data available to assess the reproductive and developmental effects of sulphur dioxide. Children may be more sensitive to the effects of sulphur dioxide due to their smaller size.

*What should I do if I am exposed to sulphur dioxide?*

It is very unlikely that the general population will be exposed to a level of sulphur dioxide high enough to cause adverse health effects.

This document will be reviewed not later than 3 years or sooner if substantive evidence becomes available

