

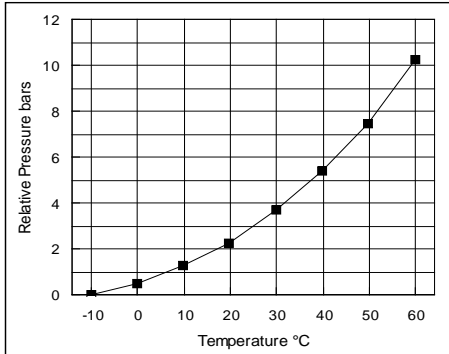


# LIQUID SULPHUR DIOXIDE

## PHYSICO-CHEMICAL CHARACTERISTICS

Formula	: SO <sub>2</sub>	Specific heat (liquid at 0°C)	: 0.324 kcal/kg°C
Molecular weight	: 64.06	Latent heat of vaporisation at 0°C	: 91.02 kcal/kg
pH of the 1 M solution (6.4%)	: 1 approx.	Latent heat of vaporisation at 50°C	: 79.71 kcal/kg
Specific gravity (liquid at 0°C)	: 1434 kg/m <sup>3</sup>	Melting point (P = 1 atm)	: -72.7°C
Specific gravity (liquid at 25°C)	: 1370 kg/m <sup>3</sup>	Boiling point (P = 1 atm)	: -10.0°C

Diagram relative pressure versus temperature:



Water solubility:

Water absorbs easily sulphur dioxide forming sulphurous acid (H<sub>2</sub>SO<sub>3</sub>), in quantities depending upon temperature and pressure.

At atmospheric pressure, we have the following maximum concentration values:

Temperature °C	0	5	10	15	20	25	30	35
Concentration								
g SO <sub>2</sub> /100 g w.	22.8	19.3	16.2	13.5	11.3	9.4	7.8	6.5

1 litre of liquid sulphur dioxide at 0°C and 760 mm Hg expands to: 502 litres at atmospheric pressure and at 0°C temperature

1 kg of liquid sulphur dioxide at 0°C and 760 mm Hg expands to: 349.5 litres at atmospheric pressure and at 0°C temperature

## QUALITATIVE CHARACTERISTICS

Assay	% SO <sub>2</sub>	> 99.9	Iron	mg/kg Fe	< 5
Moisture	mg/kg H <sub>2</sub> O	< 100	Selenium	mg/kg Se	< 10
Sulphur trioxide	mg/kg SO <sub>3</sub>	< 100	Arsenic	mg/kg As	< 3
Non volatile residue	mg/kg	< 100	Lead	mg/kg Pb	< 2
			Mercury	mg/kg Hg	< 1

The product complies specifications of: Regulation EU 231/2012 (food additives).

The indicated values are intended as determined according to our standard analysis methods.

## STANDARD PACKAGING

	<i>Net weight kg</i>	<i>Tare kg</i>
Steel cylinders	58	22
Steel drums	900	300
ISO containers	ca.20,000	
Road tankers	25,000	
Rail tankers	25,000/55,000	

Connections for steel cylinders and drums: right-hand connections 21.7 mm diameter, 14 threads per inch.

FOR HANDLING INFORMATION PLEASE CONSULT THE SAFETY DATA SHEET.

THIS TECHNICAL DATA SHEET IS IDENTIFIED AS **SO2 1 (0920) E11**



# LIQUID SULPHUR DIOXIDE

## DOSING SYSTEM

Automatic systems for continuous dosage are available for liquid and gaseous sulphur dioxide. Semiautomatic dosing system (sulphitometers) are also available for small capacities (2 and 5 kg). Ask for specific technical sheet.

## NOTICE

The sharp odour and the irritating effect on the mucous of the respiratory apparatus and of the eyes, allows detection of the presence of sulphur dioxide in quantity as low as 5 ppm.

Detection of sulphur dioxide leakage: gaseous sulphur dioxide instantaneously forms with ammonia an abundant white fog of ammonium sulphite. This way is easy to identify also minimum leakages in connections and pipelines by blowing gaseous ammonia onto suspected points, using a spray-diffuser containing 30% ammonia solution.

## MAIN USES

In chemical industry: in the production of hydrosulphite, sulphoxilates, sulphites, bisulphites, thiosulphates, sulphonates, chlorine-sulphonate paraffins and sulphuryl-chloride, sulphitated aethanolamines, chromium basic sulphate, manganese sulphate, caprolactam, resins, dye intermediates.

In the production of phthalic anhydride (co-catalyst) and acrylic fibres (activator).

In food industry: in the preserving and bleaching treatment of dried and candied fruit, fruit syrup, citrus fruit, cherries, apples, fruit juices, potatoes, cereals, mushrooms, animal fats and oils.

In sugar industry as bacteriostatic, bleaching and acidifying agent.

In starch production as bacteriostatic.

In drinking water treatment, in order to remove the excess of chlorine.

In waste water treatment, as reductant of polluting metallic ions (chrome) and as oxidant of sulphide and cyanides.

In mining industry for extraction and refining (as floating agent) some metals from their respective ores.

In metallurgical industry, in order to produce a reducing environment during magnesium casting or as catalyst of resins in the manufacturing of casting moulds.

In textile and pulp & paper industry: as bleaching agent and for removing the excess of chlorine and peroxide.

In pharmaceutical industry, as antiseptic and disinfectant.

In the petroleum refinery, to remove (as solvent) sulphur-, oxygen- and nitrogen-containing compounds from kerosene and light oils.

In electric power stations for conditioning stack gas to facilitate removal of fly ash.

In the glass manufacture, as acidifying agent.