

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

113

Sulphur dioxide

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier				
Product form	: Substance			
Trade name	: Sulphur dioxide Sulphur dioxide 2.5 Sulphur dioxide 3.5 Sulphur dioxide 3.8 Sulphur dioxide 4.0			
SDS code	: 113			
Internal reference no.	: 002096			
Synonyms	: Sulfurous anhydride			
Chemical description	: Sulphur dioxide			
CAS-No.	: 7446-09-5			
EC-No.	: 231-195-2			
EC Index-No.	: 016-011-00-9			
Registration-No.	: 01-2119485028-34			
Chemical formula	: SO2			
1.2. Relevant identified uses of the subs	tance or mixture and uses advised against			
Relevant identified uses	: Industrial and professional. Perform risk assessment prior to use. Contact supplier for more information on uses.			
Uses advised against	: Consumer use.			
1.3. Details of the supplier of the safety	data sheet			
Company identification	: Sapio Produzione Idrogeno Ossigeno Srl Via S. Pellico, 48 20900 Monza - ITALIA +39 039 83981 +39 039 836068 http://www.sapio.it/ sds@sapio.it			
1.4. Emergency telephone number				
Emergency telephone number	: +39 0295705444 (24/7)			

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture				
Classification according to Regulation (EC) No. 1272/2008 [CLP]				
Physical hazards	Gases under pressure: Liquefied gas	H280		
	Acute toxicity (inhalation:gas) Category 3	H331		
Health hazards	Skin corrosion/irritation, Category 1B	H314		
	Serious eye damage/eye irritation, Category 1	H318		

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)	GHS04 GHS05 GHS06
Signal word (CLP)	: Danger
	H280 - Contains gas under pressure; may explode if heated.
Hazard statements (CLP)	: H331 - Toxic if inhaled.
	H314 - Causes severe skin burns and eye damage.
	EUH071 - Corrosive to the respiratory tract.
Precautionary statements (CLP)	
	- Prevention : P260 - Do not breathe gas, vapours.
	P264 - Wash hands, forearms and face thoroughly after handling.
	P280 - Wear protective gloves/protective clothing/eye protection/face protection.
	- Response : P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .



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- Storage : P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

P405 - Store locked up.

2.3. Other hazards

Other hazards not contributing to the classification : None.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Sulphur dioxide	CAS-No.: 7446-09-5 EC-No.: 231-195-2 EC Index-No.: 016-011-00-9 Registration-No.: 01-2119485028-34	100	Press. Gas (Liq.), H280 Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1B, H314 Eye Dam. 1, H318

Contains no other components or impurities which will influence the classification of the product.

3.2. Mixtures				
Not applicable				
SECTION 4: First aid measures				
4.1. Description of first aid measures				
- Inhalation	: Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Perform cardiopulmonary resuscitation if breathing stopped.			
- Skin contact	 Remove contaminated clothing. Drench affected area with water for at least 15 minutes. In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance. 			
- Eye contact	: Immediately flush eyes thoroughly with water for at least 15 minutes.			
- Ingestion	: Ingestion is not considered a potential route of exposure.			
4.2. Most important symptoms and effects,	both acute and delayed			
	May cause severe chemical burns to skin and cornea. Suitable first-aid treatment should be immediately available. Seek medical advice before using product.			
	Prolonged exposure to small concentrations may result in pulmonary oedema.			
Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea.				
Refer to section 11.				
4.3. Indication of any immediate medical attention and special treatment needed				

Obtain medical assistance.

Treat with corticosteroid spray as soon as possible after inhalation.

5.1. Extinguishing media	
- Suitable extinguishing media	: Water spray or fog.
- Unsuitable extinguishing media	: Do not use water jet to extinguish.
5.2. Special hazards arising from the subs	stance or mixture
Specific hazards	: Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products	: None that are more hazardous than the product itself.
5.3. Advice for firefighters	
Specific methods	 Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may caus gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible. Move containers away from the fire area if this can be done without risk.
Special protective equipment for fire fighters	: Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. Standard EN 943-2: Protective clothing against liquid and gaseous chemicals, aerosols and solid particles. Gas-tight chemical protective suits for emergency teams. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

SECTION 6: Accidental release measures 6.1. Personal precautions, protective equipment and emergency procedures

Try to stop release.

Evacuate area.



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	Monitor concentration of released product. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Use chemically protective clothing. Ensure adequate air ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
	Act in accordance with local emergency plan.
	Stay upwind.
6.2. Environmental precautions	
	Reduce vapour with fog or fine water spray.
	Try to stop release.
6.3. Methods and material for containment and	I cleaning up
	Hose down area with water. Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost). Wash contaminated equipment or sites of leaks with copious quantities of water.
6.4. Reference to other sections	
	See also sections 8 and 13.

SECTION 7: Handling and stor	age
7.1. Precautions for safe handling	
Safe use of the product	 The product must be handled in accordance with good industrial hygiene and safety procedures. Only experienced and properly instructed persons should handle gases under pressure. Consider pressure relief device(s) in gas installations. Ensure the complete gas system was (or is regularily) checked for leaks before use. Do not smoke while handling product. Avoid exposure, obtain special instructions before use. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature Contact your gas supplier if in doubt. Installation of a cross purge assembly between the cylinder and the regulator is recommended. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Avoid suck back of water, acid and alkalis. Do not breathe gas. Avoid release of product into atmosphere.
Safe handling of the gas receptacle	 Reveal release of product into antiosphere. Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect receptacles from physical damage; do not drag, roll, slide or drop. When moving receptacles, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport receptacles. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating receptacle valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the receptacle contents. Suck back of water into the container must be prevented. Open valve slowly to avoid pressure shock.
7.2. Conditions for safe storage, inclu	ding any incompatibilities
	Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Container valve guards or caps should be in place. Containers should be stored in the vertical position and properly secured to prevent them from falling over. Stored containers should be periodically checked for general condition and leakage. Keep container below 50°C in a well ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials.
7.3. Specific end use(s)	
	None.



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Gas detectors should be used when toxic gases may be released. Consider the use of a work permit system e.g. for maintenance activities. 8.2.2. Individual protection measures, e.g. personal protective equipment A risk assessment should be conducted and documented in each work area to assess the risks related to use of a work permit system e.g. for maintenance activities. e. Eyelface protection A risk assessment should be conducted and documented in each work area to assess the risks related to use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered: PPE compliant to the recommended EN/ISO standards should be selected. • Eyelface protection Wear gogles and a face shield when transfilling or breaking transfer connections. Standard EN 166. Personal eye-protection - specifications. Provide readily accessible eye wash stations and safety showers. • Skin protection Wear working gloves when handling gas containers. Standard EN 388. Protective gloves against mechanical risk. Wear cold insulating gloves. Standard EN 374 - Protective gloves. Standard EN 374 - Protective gloves. Standard EN 374 - Protective gloves against themicals. Chioroprene rubber (CR). • Other • Other Keep suitable chemically resistant protective suits against liquid, solid and gaseous chemicals. Wear safety shoes while handling containers. Standard EN 180 20345 - Personal protective equipment - Safety footwear. • Respiratory protection Gas filters may be used if all surrounding conditions e.g. type and concentration of the contaminant(s) and duration of use are known. Use gas filters with full face mask, where exposure limits may be exceeded for		-			
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Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTI	SECTION 9: Physical and chemical properties		
9.1. Info	rmation on basic physical and che	emical p	roperties
Appearan	ce		
•	Physical state at 20°C / 101.3kPa	: G	Gas
•	Colour	: C	Colourless.
Odour		: P	Pungent.



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Odour threshold	: Odour threshold is subjective and inadequate to warn of overexposure.
рН	: If dissolved in water pH-value will be affected.
Melting point / Freezing point	: -75,5 °C
Boiling point	: -10 °C
Flash point	: Not applicable for gases and gas mixtures.
Evaporation rate	: Not applicable for gases and gas mixtures.
Flammability (solid, gas)	: Non flammable.
Explosive limits	: Non flammable.
Vapour pressure [20°C]	: 3,3 bar(a)
Vapour pressure [50°C]	: 8,4 bar(a)
Vapour density	: Not applicable.
Relative density, liquid (water=1)	: 1,5
Relative density, gas (air=1)	: 2,3
Water solubility	: Completely soluble.
Partition coefficient n-octanol/water (Log Kow)	: Not applicable for inorganic gases.
Auto-ignition temperature	: Non flammable.
Decomposition temperature	: Not applicable.
Viscosity	: No reliable data available.
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.
9.2. Other information	
Molar mass	: 64 g/mol
Critical temperature	: 158 °C
Other data	: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
SECTION 10: Stability and reactive	/ity
10.1. Reactivity	

10.1. Reactivity	
	No reactivity hazard other than the effects described in sub-sections below.
10.2. Chemical stability	
	Stable under normal conditions.
10.3. Possibility of hazardous reactions	
	None.
10.4. Conditions to avoid	
	Avoid moisture in installation systems.
10.5. Incompatible materials	
	Reacts with water to form corrosive acids. May react violently with alkalis. Reacts with most metals in the presence of moisture, liberating hydrogen, an extremely flammable gas. With water causes rapid corrosion of some metals. Moisture. For additional information on compatibility refer to ISO 11114.
10.6. Hazardous decomposition products	

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11.1. Information on toxicological effects								
Acute toxicity	: Toxic if inhaled. Delayed fatal pulmonary oedema possible.							
LC50 inhalation rat	1260 ppm/4h							
Skin corrosion/irritation	: Causes severe skin burns and	eye damage.						
Serious eye damage/irritation Respiratory or skin sensitisation Germ cell mutagenicity Carcinogenicity Toxic for reproduction : Fertility Toxic for reproduction : unborn child STOT-single exposure	Causes serious eye damage.No known effects from this product.							
					 No known effects from this product. No known effects from this product. No known effects from this product. 			
	 No known effects from this product. Severe corrosion to the respiratory tract at high concentrations. 							
								STOT-repeated exposure
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Aspiration hazard

: Not applicable for gases and gas mixtures.

SECTION 12: Ecological informatio	n		
12.1. Toxicity			
Assessment	: Classification criteria	re not met.	
EC50 48h - Daphnia magna	: 89 mg/l		
EC50 72h - Algae	: 48,1 mg/l		
LC50 96 h - Fish	: No data available.		
12.2. Persistence and degradability			
Assessment	: Not applicable for inorganic gases.		
12.3. Bioaccumulative potential			
Assessment	: Product is an inorgan	gas with a low potential to bioaccumulate in aquatic species.	
12.4. Mobility in soil			
Assessment	: Because of its high vo Partition into soil is ur	atility, the product is unlikely to cause ground or water pollution. ikely.	
12.5. Results of PBT and vPvB assessment			
Assessment	: Not classified as PBT	or vPvB.	
12.6. Other adverse effects			
Other adverse effects	: May cause pH change	s in aqueous ecological systems.	
Effect on the ozone layer	: None.		
Effect on global warming	: No known effects from	this product.	
SECTION 13: Disposal consideration	ons		
13.1. Waste treatment methods			
	Must not be discharge	d to atmosphere.	
	Gas may be scrubbed	in alkaline solution under controlled conditions to avoid violent reaction.	
		on levels from local regulations or operating permits are not exceeded.	
	Refer to the EIGA coo guidance on suitable	e of practice Doc.30 "Disposal of Gases", downloadable at http://www.eiga.	eu for mor
	-	t in original receptacle to supplier.	
List of hazardous waste codes (from Commission Decision 2001/118/EC)	•	ressure containers (including halons) containing dangerous substances.	
13.2. Additional information			
	External treatment an	l disposal of waste should comply with applicable local and/or national regu	lations.
SECTION 14: Transport information	n		
14.1. UN number			
UN-No.	: 1079		
14.2. UN proper shipping name			
Transport by road/rail (ADR/RID)	SULPHUR DIOXIDE		
Transport by air (ICAO-TI / IATA-DGR)	Sulphur dioxide		
Transport by sea (IMDG)	SULPHUR DIOXIDE		
14.3. Transport hazard class(es)			
Labelling			
	2	8	
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	2.3 : Toxic gases.
	8 : Corrosive substances.
Transport by road/rail (ADR/RID)	
Class	: 2
Classification code	: 2TC
Hazard identification number	: 268
Tunnel Restriction	: C/D - Tank carriage : Passage forbidden through tunnels of category C, D and E. Other carriage : Passage forbidden through tunnels of category D and E
Transport by sea (IMDG)	
Class / Div. (Sub. risk(s))	: 2.3 (8)
Emergency Schedule (EmS) - Fire	: F-C
Emergency Schedule (EmS) - Spillage	: S-U
14.4. Packing group	
Transport by road/rail (ADR/RID)	: Not applicable
Transport by air (ICAO-TI / IATA-DGR)	: Not applicable
Transport by sea (IMDG)	: Not applicable
14.5. Environmental hazards	
Transport by road/rail (ADR/RID)	: None.
Transport by air (ICAO-TI / IATA-DGR)	: None.
Transport by sea (IMDG)	: None.
14.6. Special precautions for user	
Packing Instruction(s)	
Transport by road/rail (ADR/RID)	: P200
Transport by air (ICAO-TI / IATA-DGR)	
Passenger and Cargo Aircraft	: Forbidden.
Cargo Aircraft only	: Forbidden.
Transport by sea (IMDG)	: P200
Special transport precautions	: Avoid transport on vehicles where the load space is not separated from the driver's compartment.
	Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
	Before transporting product containers:
	- Ensure there is adequate ventilation.
	- Ensure that containers are firmly secured.
	- Ensure container valve is closed and not leaking.
	- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
	- Ensure valve protection device (where provided) is correctly fitted.
14.7. Transport in bulk according to An	nex II of MARPOL 73/78 and the IBC Code
	Not applicable

Not applicable.

15.1 Safety, health and environmental reg	ulations/legislation specific for	the substance or mixture	
EU-Regulations			
Restrictions on use	: None.		
Seveso Directive : 2012/18/EU (Seveso III)	: Covered.		
National regulations			
National legislation	: Ensure all national/local regu	lations are observed.	
15.2. Chemical safety assessment			
	A CSA has been carried out.		
SECTION 16: Other information			
ndication of changes	: Revised safety data sheet in	accordance with commission regulation (EU) No 453/2010.	
Abbreviations and acronyms	: ATE: Acute Toxicity Estimate		
	CLP - Classification Labelling	Packaging Regulation; Regulation (EC) No 1272/2008	
	REACH - Registration, Evaluation, Evaluati	ation, Authorisation and Restriction of Chemicals Regulation (EC) No	



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	EINECS: European Inventory of Existing Commercial Chemical Substances
	CAS: Chemical Abstract Service
	PPE: Personal Protection Equipment
	LC50 - Lethal Concentration to 50 % of a test population
	RMM: Risk Management Measures
	PBT - Persistent, Bioaccumulative and Toxic
	vPvB - Very Persistent and Very Bioaccumulative
	STOT- SE: Specific Target Organ Toxicity - Single Exposure
	CSA: Chemical Safety Assessment
	EN: European Standard
	UN: United Nations
	ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
	IATA - International Air Transport Association
	IMDG code - International Maritime Dangerous Goods
	RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
	WGK: Water Hazard Class
	STOT - RE: Specific Target Organ Toxicity - Repeated Exposure
Training advice	: Users of breathing apparatus must be trained.
-	Ensure operators understand the toxicity hazard.
DISCLAIMER OF LIABILITY	: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
	Details given in this document are believed to be correct at the time of going to press.
	Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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