


1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier: SULFUR DIOXIDE
Synonyms: Sulfurous acid anhydride, sulfur oxide, sulphur dioxide
Intended use: Chemical feedstock, food preservative, fumigating pesticide.
Uses Advised Against: None identified.
Company Identification: DPC Industries, Inc.
DPC Enterprises, LP
DXI Industries, Inc.
DX Terminals
PO Box 24600
Houston , TX 77229-4600
Emergency
CHEMTREC (USA) (800) 424-9300
24 hour Emergency Telephone No. (281) 457-4888
www.dxgroup.com

2. Hazard identification of the product

Physical hazards	Gases under pressure; may explode if heated	Liquefied gas
Health hazards	Toxicity if inhaled Skin corrosion/irritation Serious eye damage/eye irritation Causes serious eye damage	Category 3 Category 1 Category 1 Category 1
Label elements Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.		
		
Signal Word	Danger	
Hazard Statements	Contains gas under pressure; may explode if heated. Causes severe skin burns and eye damage. Causes serious eye damage. Toxic if inhaled.	
Precautionary Statements		
Prevention	Do not breathe mist / vapors / spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves / eye protection / face protection.	
Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor / physician. Wash contaminated clothing before reuse. IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor / physician. IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. Immediately call a POISON CENTER or doctor / physician. Specific treatment (see information on this label).	
Storage	Store in a well ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight.	
Disposal	Dispose of contents / container in accordance with local / national regulations.	

3. Composition/information on ingredients

Substance classified with a health or environmental hazard. Substance with a workplace exposure limit.
Synonyms: Sulfurous acid anhydride, sulfur oxide, sulphur dioxide

Ingredient	CAS Number	Percent (%)
Sulfur Dioxide	7446-09-5	75 - 100

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4. First Aid Measures

General	Move victim to fresh air. Call 911 or emergency medical service. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Remove and isolate contaminated clothing and shoes. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. Keep victim warm and quiet. Keep victim under observation. Effects of contact or inhalation may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Inhalation	Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.
Eyes	Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.
Skin	Remove and isolate contaminated clothing and shoes. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. Keep victim warm and quiet. Keep victim under observation.
Ingestion	If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.
Most important symptoms and effects, both acute and delayed	
Overview	Effects of contact or inhalation may be delayed. Direct contact can cause frostbite and burns. Contact with eyes can cause frostbite, burns and damage to the cornea. See section 2 for further details.
Indication of immediate medical attention and special treatment needed	Toxic if inhaled. Causes serious eye damage. Causes severe skin burns and eye damage.

5. Fire-fighting measures

Recommended Extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	Direct water spray. Direct water spray jet.
Special hazards arising from the substance or mixture	Does not decompose but will react with water or steam to produce corrosive sulfurous acid. Do not breathe mist / vapors / spray.
Advice for fire-fighters	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Stop flow of gas if safe to do so. Some may burn but none ignite readily. Vapors from liquefied gas are initially heavier than air and spread along ground. Some of these materials may react violently with water. Cylinders exposed to fire may vent and release toxic and/or corrosive gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket. TOXIC; may be fatal if inhaled, ingested or absorbed through skin. Vapors are extremely irritating and corrosive. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire will produce irritating, corrosive and/or toxic gases. Runoff from fire control may cause pollution. ERG Guide No. 125

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6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch or walk through spilled material. Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Prevent entry into waterways, sewers, basements or confined areas. Do not direct water at spill or source of leak. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Isolate area until gas has dispersed.
Environmental precautions	Do not allow spills to enter drains or watercourses. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.
Methods and material for containment and cleaning up	CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed in Section 1. As an immediate precautionary measure, isolate spill or leak area. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep out of low areas. Ventilate closed spaces before entering.

7. Handling and storage

Precautions for safe handling	Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents
Conditions for safe storage, including any incompatibilities	Personnel should be thoroughly trained. Materials should be stored in approved containers. Firmly secure containers upright to keep them from falling or being knocked over. Store away from combustibles. Avoid exposure to moisture, high temperatures, and incompatible materials. Use only with adequate ventilation or respiratory protection. Have safety showers and eyewash fountains immediately available.

8. Exposure controls and personal protection

Exposure Control parameters

CAS No.	Ingestion	Source	Value
7446-09-5	Sulfur dioxide	OSHA	TWA 2 ppm (5 mg/m3) STEL 5 ppm (13 mg/m3)
		ACGIH	TWA: 0.25 ppm STEL: 2 ppm
		NIOSH	TWA 2 ppm (5 mg/m3) STEL 5 ppm (13 mg/m3)

Individual protection measures, such as personal protective equipment

Respiratory	Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).
Eyes	Wear safety glasses with side shields and/or safety goggles to protect the eyes. An eye wash station is suggested as a good workplace practice.
Skin	Chemical resistant clothing such as coveralls/apron boots should be worn. Chemical impervious gloves. Emergency eyewash station should be in close proximity.
Engineering Controls	Provide adequate ventilation. Where practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Eye wash and safety showers should be available when handling this product.
Other Work Practices	Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

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9. Physical and chemical properties

Appearance:	Colorless Gas or Liquid
Odor:	Strong Pungent Odor
Odor threshold:	Not Measured
pH:	Not Applicable
Melting point / freezing point:	-103 °F (-75 °C)
Initial boiling point and boiling range:	14 °F (-10 °C)
Flash Point:	Not Applicable
Evaporation rate (Ether = 1):	40.18 g/m2/s
Flammability (solid, gas):	Not Applicable
Upper/lower flammability or explosive limits:	Lower Explosive Limit: Not Applicable
	Upper Explosive Limit: Not Applicable
Vapor pressure (mmHg):	2475 mmHg
Vapor Density:	2.2
Specific Gravity:	1.2 - 1.5
Solubility in Water:	Partial
Partition coefficient n-octanol/water (Log Kow):	Not Measured
Auto-ignition temperature (°C):	Not Measured
Decomposition temperature:	Not Measured
Viscosity (cSt):	Not Measured
VOC %:	Not Measured

10. Stability and reactivity

Reactivity	Hazardous Polymerization will not occur.
Chemical stability	Stable under normal circumstances.
Possibility of hazardous reactions	None.
Conditions to avoid	No data available
Incompatible materials	Strong bases, halogens, metals, ammonia, oxidizing agents, chlorates, metal oxides, hydrides, azides, sodium carbide, and acrolein.
Hazardous decomposition products	Does not decompose but will react with water or steam to produce corrosive sulfurous acid.

11. Toxicological information

Acute toxicity

Ingredient	Results	Species	Dose	Exposure
Sulfur dioxide (7446-09-5)	LC50 Inhalation Gas.	Rat	2520 ppm	1 hour
	LC50 Inhalation	Mouse	3000 ppm	30 minutes

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11. Toxicological information Acute toxicity (Cont.)

POTENTIAL HEALTH EFFECTS:

Information on likely routes of exposure	
Eye contact:	Causes serious eye damage. Liquid exposure may cause frostbite.
Skin contact:	Causes skin burns. Liquid exposure may cause frostbite.
Inhalation:	May cause irritation (possibly severe), chemical burns, and pulmonary edema. Significant exposures may be fatal.
Ingestion:	Causes digestive tract burns.
Signs and symptoms of exposure:	Contact with this material will cause burns to the skin, eyes and mucous membranes. Cough, shortness of breath, headache, nausea, vomiting. May cause lung damage. Unconsciousness.
Information on toxicological effects	
Acute toxicity:	Fatal if inhaled. Irritation Threshold: approximately 0.5 ppm Immediately Dangerous to Life or Health: 100.0 ppm.
Carcinogenicity:	Not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.
Reproductive Toxicity:	No data available.
Specific target organ systemic toxicity (single exposure):	Not available.
Specific target organ systemic Toxicity (repeated exposure):	Causes damage to organs (lungs) through prolonged or repeated exposure.
Aspiration hazard:	Due to the physical form of the product it is not an aspiration hazard.

12. Ecological information

Toxicity- Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sulfur dioxide - (7446-09-5)	Not Available	Not Available	500.00 (72 hr), Algae

Persistence and degradability:	There is no data available on the preparation itself.
Bioaccumulative potential:	Not Measured
Mobility in soil:	No data available.
Results of PBT and vPvB assessment:	This product contains no PBT/vPvB chemicals.
Other adverse effects:	No data available.

13. Disposal considerations

Waste treatment methods:	Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. Using information provided in this data sheet, advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.
Waste from material:	The waste determination should be made in discussion between the user and the waste disposal company.
Container Management:	Return empty chlorine cylinders, tankcars and cargo tanks containing residual gas and/or liquid to supplier in compliance with applicable DOT regulations.

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14. Transport information

UN number:	UN1079
UN proper shipping name:	Sulfur dioxide
Transport hazard class(es)	
DOT (Domestic Surface Transportation)	
DOT Proper Shipping Name:	Sulfur dioxide
DOT Hazard Class	2.3, (8)
DOT Label:	2.3, 8
UN / NA Number:	UN1079
DOT Packing Group:	Not Applicable
CERCLA/DOT RQ:	500-lbs.
Environmental hazards:	IMDG Marine Pollutant: No
Special precautions for user:	Not Applicable

15. Regulatory information

Regulatory Overview:	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory.			
WHMIS Classification:	D2B E			
OSHA REGULATORY STATUS:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)			
US EPA Tier II Hazards:	Fire:	No	Immediate (Acute):	Yes
	Sudden Release of Pressure:	Yes	Delayed (Chronic):	No
	Reactive:	No		
SARA 302 Extremely Hazardous Substance / RQs (lbs) :	Yes / 500-lbs.			
SARA 311/312 Chemicals and RQs (lbs) (>0.1%) :	No			
SARA 313 (TRI)	No			
OSHA PSM (29 cfr 1910.119):	Yes (1000-lbs)			
TSCA:	Sulfur Dioxide			
State Regulations:	N.J. RTK Substances (>1%)	Listed	Penn RTK Substances (>1%)	Listed
			California Prop 65	Listed

16. Other information

Revision Information: This is the first revision of this SDS format, changes from previous revision not applicable.

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

THE USER IS CAUTIONED TO PERFORM HIS OWN HAZARD EVALUATION AND TO RELY ON HIS OWN DETERMINATIONS.