

1. IDENTIFICATION

Product Name	Grape Guard - 98% Sodium metabisulfite
Other Names	Sulfur dioxide pads
Uses	Preservative and post-harvest fungicide for packed table grapes under refrigeration conditions.
Chemical Family	No Data Available
Chemical Formula	Na ₂ S ₂ O ₅
Chemical Name	Contains: Sodium metabisulfite
Product Description	The Generator is made up of multiple cells made of paper covered with polyethylene (PE) barriers and containing Sodium metabisulfite as an active ingredient; Upon contact with moisture, releases sulfur dioxide (SO ₂). The paper sheets are designed with the appropriate barrier to release the necessary amount of SO ₂ during grape storage.

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details


For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Globally Harmonised System

Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories	Acute Toxicity (Oral) - Category 4 Serious Eye Damage/Irritation - Category 1	
Pictograms		
Signal Word	Danger	
Hazard Statements	H302	Harmful if swallowed.
	H318	Causes serious eye damage.
	AUH031	Contact with acids liberates toxic gas
Precautionary Statements	Prevention	P280 Wear eye protection/face protection. P264 Wash hands thoroughly after handling. P270 Do not eat, drink or smoke when using this product.
	Response	P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330 Rinse mouth.
	Disposal	P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	6.1D	Substances that are acutely toxic - Harmful
		6.3A	Substances that are irritating to the skin
		6.5A	Substances that are respiratory sensitisers
		6.5B	Substances that are contact sensitisers
		8.3A	Substances that are corrosive to ocular tissue
	Environmental Hazards	9.1D	Substances that are slightly harmful to the aquatic environment or are otherwise designed for biocidal action
		9.2B	Substances that are ecotoxic in the soil environment
		9.3C	Substances that are harmful to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sodium metabisulfite	Na ₂ S ₂ O ₅	7681-57-4	98 %
Sodium sulfate	Na ₂ O ₄ S	7757-82-6	1 %
Sodium sulphite	Na ₂ O ₃ S	7757-83-7	1 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do NOT induce vomiting. Call a Poison Centre or doctor/physician for advice.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Immediately call a Poison Centre or doctor/physician. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Obtain immediate medical care.
Skin	IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes; Wash with plenty of soap and water. If skin irritation or rash occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply resuscitation if victim is not breathing - Do not use direct mouth-to-mouth method if victim ingested or inhaled the substance; use alternative respiratory method or proper respiratory device. Administer oxygen if breathing is difficult. In case of exposure to Sulfur dioxide gas, Obtain immediate medical care.
Advice to Doctor	Treat symptomatically. Ensure that attending medical personnel are aware of identity and nature of product(s) involved, and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	Contains Sodium metabisulfite which may trigger an asthmatic response in sulfite sensitive individuals. Prolonged or repeated skin contact may cause allergic reactions in some individuals. Those who have asthma are most at risk to sulfite sensitivity and other forms of sulfite reactions. This sensitivity can cause a wide range of allergic reactions ranging from mild to severe.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
Flammability Conditions	Not flammable; May burn but does not ignite readily.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction - Do not use water jets.
Fire and Explosion Hazard	Containers may explode when heated. Product releases Sulphur dioxide gas in contact with water and when exposed to heat above 150 °C.
Hazardous Products of Combustion	Fire or heat may produce irritating, toxic and/or corrosive gases, including Sulfur oxides.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Liquid-tight chemical protective clothing (splash suit) in combination with self-contained breathing apparatus (SCBA) should be used.
Flash Point	>260 °C
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid dust formation (if pad is torn). Avoid breathing dust and contact with eyes, skin and clothing.
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Clean Up Procedures	Collect material mechanically and place pad and pad-contents into suitable containers for disposal (see SECTION 13). Do NOT get water inside containers.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	No information available.
Environmental Precautionary Measures	Prevent entry into drains and waterways.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Remove the generators according to the requirement only - Do not leave them exposed to the air. Avoid handling which leads to dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8). Keep away from heat and all sources of ignition - No smoking. Do NOT get water inside containers.
Storage	Store in a cool, dry and well-ventilated place. Keep container tightly closed when not in use; Seal the bags with unused product - Do not leave them exposed to air. Protect from material damage. Protect from moisture/humidity. Keep away from heat and all sources of ignition - No smoking. Keep away from food/feedstuffs and incompatible materials (see SECTION 10). Keep out of reach of children.
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	<p>COMPONENT: Sodium metabisulfite (CAS No. 7681-57-4);</p> <ul style="list-style-type: none"> - Safe Work Australia Exposure Standard: TWA = 5 mg/m³. - New Zealand WES: TWA = 5 mg/m³. <p>DECOMPOSITION PRODUCT: Sulphur dioxide (CAS No. 7446-09-5);</p> <ul style="list-style-type: none"> - Safe Work Australia Exposure Standard: TWA = 2 ppm (5.2 mg/m³); STEL = 5 ppm (13 mg/m³). - New Zealand WES: TWA = 2 ppm (5.2 mg/m³); STEL = 5 ppm (13 mg/m³).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	<ul style="list-style-type: none"> - Respiratory protection: Wear respiratory protection in case of exposure to dust or products of decomposition. Recommended: Filter type E/P (acid gas/particulate). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Safety glasses or chemical goggles, in case of exposure to dust. - Hand protection: Handle with gloves. Recommended: Impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.
Special Hazards Precautions	Contains Sodium metabisulfite which may trigger an asthmatic response in sulfite sensitive individuals. Prolonged or repeated skin contact may cause allergic reactions in some individuals. Those who have asthma are most at risk to sulfite sensitivity and other forms of sulfite reactions. This sensitivity can cause a wide range of allergic reactions ranging from mild to severe.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Remove contaminated clothing and shoes immediately and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
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Appearance	Paper sheets (The Na ₂ S ₂ O ₅ is loosely contained in multiple pockets).
Odour	Characteristic
Colour	White crystals
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	45 g/100 ml water 20°C
Specific Gravity	1.5 (H ₂ O = 1)
Flash Point	>260 °C
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	~150 °C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	Product releases Sulphur dioxide gas in contact with water.
Properties That May Initiate or Contribute to Fire Intensity	Not flammable; May burn but does not ignite readily.
Reactions That Release Gases or Vapours	Fire, heat or contamination may produce irritating, toxic and/or corrosive gases, including Sulfur oxides.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	Will liberate toxic gas when in contact with acid. Product releases Sulphur dioxide gas in contact with water and when exposed to heat above 150 °C.
Chemical Stability	Stable at ambient atmospheric pressure and temperature.
Conditions to Avoid	Keep away from heat and all sources of ignition. Protect from moisture/humidity.

Materials to Avoid	Incompatible/reactive with oxidising agents, acids, water.
Hazardous Decomposition Products	Fire, heat or contamination may produce irritating, toxic and/or corrosive gases, including Sulfur oxides.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: Harmful if swallowed (Sodium metabisulfite). Ingesting sulfites may cause irritation of the human stomach, due to liberation of SO₂, producing sulfurous acid. In some asthmatic individuals, severe adverse reactions may occur. DECOMPOSITION PRODUCT: Sulphur dioxide gas (CAS No. 7446-09-5) is toxic if inhaled. - Skin corrosion/irritation: May cause skin irritation to sensitive skin. DECOMPOSITION PRODUCT: Sulphur dioxide gas (CAS No. 7446-09-5) is corrosive to skin. - Eye damage/irritation: Causes serious eye damage (Sodium metabisulfite). - Respiratory/skin sensitisation: May trigger an asthmatic response in sulfite sensitive individuals. Prolonged or repeated skin contact may cause allergic reactions in some individuals. - Germ cell mutagenicity: Not considered to be genotoxic. - Carcinogenicity: Not considered to be carcinogenic. Sulfites, Bisulfites and Metabisulfites are classified in Group 3 of the IARC Monographs: Not classifiable as to its carcinogenicity to humans. - Reproductive toxicity: Not considered to cause reproductive or developmental toxicity. - STOT (single exposure): May cause irritation to the upper respiratory tract. - STOT (repeated exposure): Not considered to cause serious damage to health by repeated exposure. - Aspiration toxicity: No information available.
Acute	
Ingestion	<p>Acute toxicity (Oral): COMPONENT: Sodium metabisulfite (CAS No. 7681-57-4): - LD50, Rats (female): 1,131 mg/kg bw. - LD50, Rats (male): 1,903 mg/kg bw.</p>
Other	<p>Acute toxicity (Dermal): COMPONENT: Sodium metabisulfite (CAS No. 7681-57-4): - LD50, Rats: >2,000 mg/kg bw.</p>
Inhalation	<p>Acute toxicity (Inhalation): DECOMPOSITION PRODUCT: Sulphur dioxide gas (CAS No. 7446-09-5): - LC50, Rat: 965 - 1,168 ppm (4 h).</p>
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Ecological problems are not expected when the product is handled and used with due care. Prevent entry into drains and waterways.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Wastes resulting from the use of this product should be disposed of at an approved wasted disposal facility and in accordance with local/regional/national regulations.
Special Precautions for Land Fill	Container disposal: In case of decomposition, isolate container (if possible) and flood area with large amounts of water to dissolve all material before discarding. Do not re-use or refill this container. Offer for recycling if available or dispose of box (or bag) in a sanitary landfill and in accordance with local/regional/national regulations.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Grape Guard - 98% Sodium metabisulfite
Class	No Data Available
Subsidiary Risk(s)	No Data Available No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Grape Guard - 98% Sodium metabisulfite
Class	No Data Available
Subsidiary Risk(s)	No Data Available No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	Grape Guard - 98% Sodium metabisulfite
Class	No Data Available
Subsidiary Risk(s)	No Data Available No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name	Grape Guard - 98% Sodium metabisulfite
Class	No Data Available
Subsidiary Risk(s)	No Data Available No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available

Special Provision No Data Available
Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name Grape Guard - 98% Sodium metabisulfite
Class No Data Available
Subsidiary Risk(s) No Data Available
UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available
EMS No Data Available
Marine Pollutant No
Comments NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name Grape Guard - 98% Sodium metabisulfite
Class No Data Available
Subsidiary Risk(s) No Data Available
UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available
Special Provision No Data Available
Comments NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information SODIUM METABISULPHITE is listed in Schedule 5 of the SUSMP when packed for domestic use, except in preparations containing 10 % or less of Sodium metabisulphite.

Poisons Schedule (Aust) Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR001548

National/Regional Inventories

Australia (AICS) Listed

Canada (DSL) Not Determined

Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	GRGUAR0800, GRGUAR0900
Revision	2
Revision Date	01 Feb 2019
Key/Legend	<p>< Less Than > Greater Than AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. ltr or L Litre m³ Cubic Metre mbar Millibar mg Milligram mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram</p>

mg/m³ Milligrams per Cubic Metre
Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH₂O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Health and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight