

1. IDENTIFICATION

Product Name Sulphur (Formed)

Other Names Brimstone; Premix S-80; SG Granule; Sulfur

Uses Chemical synthesis, rubber processing, pulp/paper, detergents, petroleum refining, dyes, pharmaceuticals, explosives,

fertilisers, pesticides, photography.

Chemical Family No Data Available

Chemical Formula S

Chemical Name Sulphur

Product Description No Data Available

Contact Details of the Supplier of this Safety Data Sheet

 Organisation
 Location
 Telephone

 Redox Ltd
 2 Swettenham Road
 +61-2-97333000

Minto NSW 2566 Australia

Redox Ltd 11 Mayo Road +64-9-2506222

Wiri Auckland 2104 New Zealand

Redox Inc. 3960 Paramount Boulevard +1-424-675-3200

Suite 107

Lakewood CA 90712

USA

Redox Chemicals Sdn Bhd Level 2, No. 8, Jalan Sapir 33/7 +60-3-5614-2111

Seksyen 33, Shah Alam Premier Industrial Park

40400 Shah Alam Sengalor, Malaysia

Emergency Contact Details

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

OrganisationLocationTelephonePoisons Information CentreWestmead NSW1800-251525
131126ChemcallAustralia1800-127406
+64-4-9179888ChemcallMalaysia+64-4-9179888

 Chemcall
 New Zealand
 0800-243622

 +64-4-9179888
 +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 Skin Corrosion/Irritation - Category 2

Pictograms

Signal Word Warning

Hazard Statements H315 Causes skin irritation.

Precautionary Statements Prevention P280 Wear protective gloves.

Response **P302 + P352** IF ON SKIN: Wash with plenty of water.

P332 + P313 If skin irritation occurs: Get medical advice.

P362 + P364 Take off contaminated clothing and wash it before reuse.

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)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications Health Hazards 6.4A Substances that are irritating to the eye

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Sulphur	S	7704-34-9	80 - 100 %
Ingredients determined not to be hazardous	Unspecified	Unspecified	0 - 20 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink a glass of water. Do not induce vomiting. Get immediate medical

advice/attention. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Never give anything by mouth to an unconscious person.

Eye IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting

the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye

irritation persists, get medical advice/attention.

Skin IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation

occurs, get medical advice/attention.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms

persist, get medical advice/attention. 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.

Treat symptomatically. Ensure that attending medical personnel are aware of the identity and nature of the product(s)

involved, and take precautions to protect themselves.

Medical Conditions Aggravated by No information available.

Exposure

Advice to Doctor

5. FIRE FIGHTING MEASURES

General Measures If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.

Flammability Conditions Combustible solid; may burn but does not ignite readily.

*Flammable solid in powder form.

Extinguishing Media Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction - Do not scatter spilled material with high-

pressure water streams.

Fire and Explosion Hazard Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a

potential dust explosion hazard. May be ignited by friction, heat, sparks or flame. May burn fiercely. May re-ignite after fire is extinguished. Solids may melt and flow when heated or involved in a fire. Containers may explode when heated.

*This material is sensitive to static discharge at temperatures at or above the flash point.

Hazardous Products of

Combustion

Fire will produce irritating, corrosive and/or toxic gases, including Sulfur oxides, Hydrogen sulfide.

*Hydrogen sulphide gas is heavier than air and may collect in low or confined areas.

Special Fire Fighting Instructions Contain runoff from fire control or dilution water - Runoff may cause pollution.

Personal Protective Equipment Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only

provide limited protection.

Flash Point 218 °C

Lower Explosion LimitNo Data AvailableUpper Explosion LimitNo Data AvailableAuto Ignition TemperatureNo Data AvailableHazchem CodeNo Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure Ensure adequate ventilation - Ventilate closed spaces before entering. ELIMINATE all ignition sources. Do not touch or

walk through spilled material - Slippery when spilt. Avoid accidents, clean up immediately! Avoid generating dust. Avoid

breathing dust and contact with eyes, skin and clothing.

Clean Up Procedures Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers for disposal (see

SECTION 13).

*Use non-sparking tools.

Containment Stop leak if you can do it without risk. Prevent dust cloud. Prevent entry into waterways, sewers, basements 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.

7. HANDLING AND STORAGE

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. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). WARNING: May form combustible dust concentrations in air (during processing). Keep away from heat and sources of ignition - No smoking. Take pregautionary measures against static discharges.

Keep away from heat and sources of ignition - No smoking. Take precautionary measures against static discharges.

Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use - check regularly for spills. Protect against physical damage. Protect from moisture. Keep away from heat and sources of ignition -

No smoking. Keep away from foodstuffs and incompatible materials (see SECTION 10).

Container Keep in the original container.

*Empty containers may contain combustible product residues. Do not weld, solder, drill, cut or incinerate empty

containers, unless they have been properly cleaned.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

GeneralNo specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards:

- Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3 (measured as inhalable dust).
- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable dust). HAZARDOUS DECOMPOSITION PRODUCT: Sulphur dioxide (CAS No. 7446-09-5):
- Safe Work Australia Exposure Standard: TWA = 2 ppm (5.2 mg/m3); STEL = 5 ppm (13 mg/m3).
- New Zealand Workplace Exposure Standard [Adopted 2019]: STEL = 0.25 ppm (0.66 mg/m3); Respiratory sensitiser (rsen).

HAZARDOUS DECOMPOSITION PRODUCT: Hydrogen sulphide (CAS No. 7783-06-4):

- Safe Work Australia Exposure Standard: TWA = 10 ppm (14 mg/m3); STEL = 15 ppm (21 mg/m3).
- New Zealand Workplace Exposure Standard [Adopted 2019]: Interim WES-TWA = 5 ppm (7 mg/m3); STEL = 10 ppm (14 mg/m3).

Exposure Limits No Data Available

Biological Limits No information available.

Engineering MeasuresA 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.

*Use explosion-proof electrical/ventilating/lighting equipment.

Personal Protection Equipment

- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Air purifying respirator with acid gas/particulate filter or self-contained breathing apparatus (refer to AS/NZS 1715 & 1716). Supplied air breathing apparatus must be used when oxygen concentrations are low, if airborne concentrations exceed the limits of the air-purifying respirators or where hydrogen sulfide is present or possibly present in confined spaces at hazardous levels.
- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or dust-tight goggles, if dust is generated when handling this product.
- Hand protection: Wear protective gloves. Recommended: Impervious gloves, e.g. rubber or plastic gloves. If product is hot, thermally protective gloves are recommended.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes/boots.

Special Hazards Precaustions

A specific assessment of inhalation risks from the presence of Sulfur dioxide (SO2) and/or hydrogen sulphide (H2S) in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases must be made to help determine controls appropriate to local circumstances. Concentrations of SO2 and/or H2S in silos, pits or tanks can reach hazardous values in case of prolonged storage, particularly where the sulphur is molten or recently solidified from the molten state. Cleaning, inspection and maintenance of internal structure of storage equipment must be done only by properly equipped and qualified personnel. Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, SO2, H2S and flammability.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid

Appearance Granules, flakes, prills, pellets, pastilles

Odour Odourless
Colour Yellow

pH No Data Available

Vapour Pressure 0.00014 Pa (@ 20 °C)

Relative Vapour Density No Data Available

Boiling Point 444 - 445 °C

Melting Point 118 - 120 °C

Freezing Point No Data Available

Solubility Insoluble in water (<0.005 mg/L) 22°C

Auto Ignition TempNo Data AvailableEvaporation RateNo Data AvailableBulk DensityNo Data AvailableCorrosion RateNo Data Available

Decomposition Temperature >180 °C

Density No Data Available **Specific Heat** No Data Available **Molecular Weight** 32.07 g/mol **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 No Data Available Viscosity **Volatile Percent** No Data Available

Additional Characteristics This material is sensitive to static discharge at temperatures at or above the flash point.

Potential for Dust Explosion Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a

potential dust explosion hazard. May be ignited by friction, heat, sparks or flame.

Fast or Intensely Burning

Characteristics

VOC Volume

May burn fiercely. May re-ignite after fire is extinguished.

Flame Propagation or Burning

Rate of Solid Materials

No information available.

No Data Available

Non-Flammables That Could Contribute Unusual Hazards to a No information available.

Fire

Properties That May Initiate or

Contribute to Fire Intensity

Combustible solid; may burn but does not ignite readily.

*Flammable solid in powder form.

Reactions That Release Gases or

Vapours

Fire/decomposition will produce irritating, corrosive and/or toxic gases, including Sulfur oxides, Hydrogen sulfide.

Release of Invisible Flammable

Vapours and Gases

Vapours may form explosive mixtures with air.

10. STABILITY AND REACTIVITY

General Information May react violently with finely divided metals, alkali metals and mineral acids. May be corrosive to damp steel.

Chemical Stability This material is stable under recommended storage and handling conditions.

Conditions to Avoid Avoid Avoid generating dust. Keep away from heat and sources of ignition. Protect from moisture.

Materials to Avoid Incompatible/reactive with oxidising agents, finely divided metals, alkali metals, mineral acids.

Hazardous Decomposition

Products

Fire/decomposition will produce irritating, corrosive and/or toxic gases, including Sulfur oxides, Hydrogen sulfide.

Hazardous Polymerisation Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information - Acute toxicity: No adverse health effects expected. Ingestion may cause nausea, vomiting, abdominal pain and

diarrhoea. Sulphur may be converted into Hydrogen sulphide in the intestine.

Skin corrosion/irritation: Causes skin irritation.Eye damage/irritation: May cause eye irritation. May cause physical irritation to the eyes.

- Respiratory/skin sensitisation: Non-sensitising (Guinea pig).

- Germ cell mutagenicity: No information available.

- Carcinogenicity: Not listed as carcinogenic according to the International Agency for Research on Cancer (IARC).

- Reproductive toxicity: No information available.

- STOT (single exposure): Breathing in dust may result in respiratory irritation.

- STOT (repeated exposure): No information available.

- Aspiration toxicity: No information available.

Acute

Ingestion Acute toxicity (Oral):

- LD50, Rat: 2,000 mg/kg [Supplier's SDS].

Other Acute toxicity (Dermal):

- LD50, Rat: 2,000 mg/kg [Supplier's SDS].

Carcinogen Category None

12. ECOLOGICAL INFORMATION

 Ecotoxicity
 No information available.

 Persistence/Degradability
 No information available.

 Mobility
 No information available.

Environmental Fate Slightly hazardous to water - Prevent entry into drains and waterways.

Bioaccumulation Potential No information available.

Environmental Impact No Data Available

13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations.

Special Precautions for Land Fill Contaminated packaging: Empty containers may contain combustible product residues. Do not weld, solder, drill, cut or

incinerate empty containers, unless they have been properly cleaned.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name

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 242

Comments UN#1350: Sulphur is not regulated as DG when it has been formed to a specific shape (e.g. prills, granules,

pellets, pastilles or flakes).

Land Transport (Malaysia)

ADR Code

Proper Shipping Name
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 242

Comments UN#1350: Sulphur is not regulated as DG when it has been formed to a specific shape (e.g. prills, granules,

pellets, pastilles or flakes).

Land Transport (New Zealand)

NZS5433

UN Number

Pack Group

Hazchem

Proper Shipping Name
Class
No Data Available
Subsidiary Risk(s)
No Data Available
No Data Available

No Data Available No Data Available

No Data Available

Special Provision 242

Comments UN#1350: Sulphur is not regulated as DG when it has been formed to a specific shape (e.g. prills, granules,

pellets, pastilles or flakes).

Land Transport (United States of America)

US DOT

Proper Shipping NameSulphur (formed)ClassNo Data AvailableSubsidiary 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 UN#1350: Sulphur is not regulated as DG when it has been formed to a specific shape (e.g. prills, granules,

pellets, pastilles or flakes).

Sea Transport

IMDG Code

Proper Shipping Name
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 242

EMS No Data Available

Marine Pollutant No

Comments UN#1350: Sulphur is not regulated as DG when it has been formed to a specific shape (e.g. prills, granules,

pellets, pastilles or flakes).

Air Transport

IATA DGR

Proper Shipping Name
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 242

Comments UN#1350: Sulphur is not regulated as DG when it has been formed to a specific shape (e.g. prills, granules,

pellets, pastilles or flakes).

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 No Data Available
Poisons Schedule (Aust) Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR002503

National/Regional Inventories

Australia (AIIC) Listed

Canada (DSL) Listed

Canada (NDSL) Not Determined

China (IECSC) Listed

Europe (EINECS) Listed

Europe (REACh) Not Determined

Japan (ENCS/METI) Listed

Korea (KECI) Listed

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) Listed

USA (TSCA) Listed

16. OTHER INFORMATION

Related Product Codes

SULPHU0900, SULPHU0100, SULPHU0400, SULPHU0401, SULPHU0500, SULPHU0600, SULPHU0800, SULPHU0801, SULPHU0900, SULPHU1000, SULPHU1001, SULPHU1002, SULPHU1003, SULPHU1007, SULPHU1008, SULPHU1017, SULPHU1100, SULPHU1200, SULPHU1201, SULPHU1202, SULPHU1203, SULPHU1205, SULPHU1210, SULPHU1220, SULPHU1300, SULPHU1500, SULPHU1600, SULPHU1611, SULPHU1700, SULPHU1705, SULPHU1710, SULPHU1711, SULPHU1800, SULPHU1900, SULPHU2000, SULPHU2001, SULPHU2003, SULPHU2003, SULPHU2007, SULPHU2400, SULPHU2401, SULPHU2500, SULPHU2501, SULPHU2600, SULPHU2601, SULPHU2800, SULPHU2801, SULPHU2802, SULPHU2811, SULPHU2900, SULPHU2901, SULPHU2902, SULPHU3000, SULPHU3001, SULPHU3002, SULPHU3100, SULPHU3101, SULPHU3300, SULPHU3301, SULPHU3400, SULPHU3600, SULPHU3801, SULPHU3900, SULPHU4000, SULPHU4001, SULPHU4200, SULPHU4300, SULPHU4400, SULPHU4820, SULPHU5501, SULPHU5501, SULPHU5601, SULPHU5700, SULPHU5800, SULPHU5900, SULPHU5901, SULPHU6010, SULPHU6010, SULPHU6000, SULPHU7700, SULPHU7700, SULPHU7700, SULPHU8000, SULPHU8000, SULPHU9000, SULPHU

Revision 7

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square CentimetresCO2 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/I 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

Ib 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.

Itr or L Litre m³ Cubic Metre mbar Millibar mg Milligram

mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram

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 Heath and Safety Commission
OFCD Occupation for Formatic Composition and Pourland

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