

### 1. IDENTIFICATION

<b>Product Name</b>	<b>High Impact Polystyrene (HIPS)</b>
<b>Other Names</b>	H310; H350; H350E; STYRON 470; STYRON 5050
<b>Uses</b>	For industrial conversion as a raw material for manufacture of articles and goods.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	Unspecified
<b>Chemical Name</b>	Contains: Styrene, 1,3-butadiene polymer
<b>Product Description</b>	Rubber modified polystyrene; Thermoplastic polymer; Vinylbenzene polymer. Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.

### 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** NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

**Signal Word** None

### 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)

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Styrene, 1,3-butadiene polymer	Unspecified	9003-55-8	>94 %
Ingredients determined not to be hazardous	Unspecified	Unspecified	Balance %

## 4. FIRST AID MEASURES

### Description of necessary measures according to routes of exposure

<b>Swallowed</b>	IF SWALLOWED: Rinse mouth, then drink plenty of water. Get medical advice/attention if you feel unwell.
<b>Eye</b>	IF IN EYES: Rinse cautiously with 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.
<b>Skin</b>	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention. In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. Obtain immediate medical care.
<b>Inhaled</b>	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.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>Medical Conditions Aggravated by Exposure</b>	No information available.

## 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out - May re-ignite itself after fire is extinguished. Avoid getting water inside containers.
<b>Flammability Conditions</b>	May be combustible at high temperatures.
<b>Extinguishing Media</b>	Use dry chemical, Carbon dioxide, foam or water spray for extinction - Do not use water jets.
<b>Fire and Explosion Hazard</b>	Flowing material may produce static discharge. May form combustible dust concentrations in air.
<b>Hazardous Products of Combustion</b>	Fire will produce irritating and/or toxic gases, including Carbon monoxide, Carbon dioxide, styrene, aliphatic hydrocarbons and smoke/soot.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
<b>Personal Protective Equipment</b>	Full fire kit and self-contained breathing apparatus (SCBA).
<b>Flash Point</b>	>550 °C - (296 - 360 °C under decomposition conditions)
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available

<b>Auto Ignition Temperature</b>	488 - 496 °C
<b>Hazchem Code</b>	No Data Available

## 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Ensure adequate ventilation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk through spilled material - Pellets on the floor are a SLIPPING HAZARD. Avoid breathing dust and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Sweep, shovel or vacuum material and transfer to suitable, clean containers for later reuse or disposal (see SECTION 13).
<b>Containment</b>	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
<b>Decontamination</b>	No information available.
<b>Environmental Precautionary Measures</b>	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
<b>Evacuation Criteria</b>	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.
<b>Personal Precautionary Measures</b>	Use personal protective equipment as required (see SECTION 8).

## 7. HANDLING AND STORAGE

<b>Handling</b>	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. Keep away from extreme heat and ignition sources - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge. Avoid temperatures of 316 °C or above. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8).
<b>Storage</b>	Store in a cool, dry and well-ventilated place. Keep container tightly closed. Keep away from extreme heat and ignition sources - No smoking. Keep away from incompatible materials (strong oxidising agents).
<b>Container</b>	Keep in the original container. CAUTION: When handled in bulk quantities, this product and its associated packaging may present a crushing hazard due to the large masses involved, possibly resulting in severe injury or death.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>General</b>	No 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/m <sup>3</sup> (measured as inhalable dust). - OSHA PEL (Particulates not otherwise regulated): TWA = 15 mg/m <sup>3</sup> (total); STEL = 5 mg/m <sup>3</sup> (respirable).
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	No information available.
<b>Engineering Measures</b>	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. Use explosion-proof electrical/ventilating/lighting equipment.
<b>Personal Protection Equipment</b>	Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side-shields. Hand protection: Handle with gloves; Wear thermally insulated gloves when handling hot material. Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Coveralls, shoes.
<b>Special Hazards Precautions</b>	Pneumatic material handling and processing equipment may generate dust of sufficiently small particle size that, when suspended in air, may be explosive. Dust accumulations should be controlled through a comprehensive dust control program that includes, but is not limited to, source capture, inspection and repair of leaking equipment, routine housekeeping and employee hazard training.

**Work Hygienic Practices**

Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Solid
<b>Appearance</b>	Pellets or granules
<b>Odour</b>	Odourless
<b>Colour</b>	Natural; Creamy white
<b>pH</b>	No Data Available
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	No Data Available
<b>Melting Point</b>	>132 °C
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Insoluble in water - Soluble in esters, ketones, aromatic hydrocarbons
<b>Specific Gravity</b>	1.04 - 1.06 (Water = 1)
<b>Flash Point</b>	>550 °C - (296 - 360 °C under decomposition conditions)
<b>Auto Ignition Temp</b>	488 - 496 °C
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	approx. 250 °C
<b>Density</b>	No Data Available
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	Negligible
<b>VOC Volume</b>	0 %
<b>Additional Characteristics</b>	No information available.
<b>Potential for Dust Explosion</b>	Processing or material handling equipment may generate dust of sufficiently small particle size, that when suspended in air may be explosive.
<b>Fast or Intensely Burning Characteristics</b>	No information available.
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No information available.
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No information available.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	May be combustible at high temperatures.
<b>Reactions That Release Gases or Vapours</b>	Fire/thermal decomposition will produce irritating and/or toxic gases, including Carbon monoxide, Carbon dioxide, styrene, benzene, aliphatic hydrocarbons and smoke/soot.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	No information available.
<b>Chemical Stability</b>	This product is stable under normal conditions.
<b>Conditions to Avoid</b>	Keep away from extreme heat and ignition sources - No smoking. Avoid temperatures of 316 °C or above.
<b>Materials to Avoid</b>	Incompatible/reactive with strong oxidising agents.
<b>Hazardous Decomposition Products</b>	Fire/thermal decomposition will produce irritating and/or toxic gases, including Carbon monoxide, Carbon dioxide, styrene, benzene, aliphatic hydrocarbons and smoke/soot.
<b>Hazardous Polymerisation</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	Routes of exposure: - Eye contact: Dust may cause mechanical irritation to eyes. Vapours formed when the polymer is heated may be irritating to the eyes. Effects may include discomfort and redness. - Skin contact: No adverse health effects expected from skin contact with solid pellets. Contact with molten or heated material may cause severe burns. - Ingestion: No adverse health effects are expected from (accidental) ingestion of small amounts. May be a choking hazard. - Inhalation: Nuisance dusts may be irritating to the upper respiratory tract. Irritating vapours may form when the polymer is processed at high temperatures. Chronic effects: Not listed as a carcinogen by OSHA, NTP or IARC. Additives are encapsulated in the product and are not expected to be released under normal processing conditions or foreseeable emergency.
<b>Acute</b>	
<b>Ingestion</b>	Acute toxicity (Oral): - LD50, Rat: >5,000 mg/kg [Estimated].
<b>Other</b>	Acute toxicity (Dermal): - LD50, Rabbit: >2,000 mg/kg [Estimated].
<b>Carcinogen Category</b>	None

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	This product is essentially a high molecular weight polymer, not regarded as ecotoxic.
<b>Persistence/Degradability</b>	This product is not readily biodegradable; Persistent in the environment.
<b>Mobility</b>	No information available.
<b>Environmental Fate</b>	Prevent entry into drains and waterways.
<b>Bioaccumulation Potential</b>	May accumulate in soil and water systems.
<b>Environmental Impact</b>	No Data Available

## 13. DISPOSAL CONSIDERATIONS

<b>General Information</b>	After suitable treatment (cleaning, grinding, etc), the preparation can be safely re-used, as is or mixed with fresh material, when this is compatible with the intended final application. Residues should be disposed of as required by local/regional/national regulations.
<b>Special Precautions for Land Fill</b>	Landfilling should be avoided as far as possible. If unavoidable, use approved landfill sites. Incineration must be done under approved conditions, possibly with energy recovery and only at suitable facilities equipped with a scrubber for the treatment of fumes before their release into the atmosphere.

## 14. TRANSPORT INFORMATION

### Land Transport (Australia)

ADG Code

<b>Proper Shipping Name</b>	High Impact Polystyrene (HIPS)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

### Land Transport (Malaysia)

ADR Code

<b>Proper Shipping Name</b>	High Impact Polystyrene (HIPS)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

### Land Transport (New Zealand)

NZS5433

<b>Proper Shipping Name</b>	High Impact Polystyrene (HIPS)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

### Land Transport (United States of America)

US DOT

<b>Proper Shipping Name</b>	High Impact Polystyrene (HIPS)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

## Sea Transport

IMDG Code

<b>Proper Shipping Name</b>	High Impact Polystyrene (HIPS)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>EMS</b>	No Data Available
<b>Marine Pollutant</b>	No

## Air Transport

IATA DGR

<b>Proper Shipping Name</b>	High Impact Polystyrene (HIPS)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available

## National Transport Commission (Australia)

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

<b>Dangerous Goods Classification</b>	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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## 15. REGULATORY INFORMATION

<b>General Information</b>	No Data Available
<b>Poisons Schedule (Aust)</b>	Not Scheduled

## National/Regional Inventories

<b>Australia (AICS)</b>	Listed
<b>Canada (DSL)</b>	Not Determined
<b>Canada (NDSL)</b>	Not Determined
<b>China (IECSC)</b>	Listed
<b>Europe (EINECS)</b>	Not Determined
<b>Europe (REACH)</b>	Not Determined
<b>Japan (ENCS/METI)</b>	Listed
<b>Korea (KECI)</b>	Listed

Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Not Determined
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	POLYST0470, POLYST5050, POLYST7710, POLYST7715, POLYST7718, POLYST7720
Revision	1
Revision Date	10 Jun 2016
Key/Legend	<p>&lt; Less Than &gt; Greater Than  <b>AICS</b> Australian Inventory of Chemical Substances  <b>atm</b> Atmosphere  <b>CAS</b> Chemical Abstracts Service (Registry Number)  <b>cm<sup>2</sup></b> Square Centimetres  <b>CO<sub>2</sub></b> Carbon Dioxide  <b>COD</b> Chemical Oxygen Demand  <b>deg C (°C)</b> Degrees Celcius  <b>EPA (New Zealand)</b> Environmental Protection Authority of New Zealand  <b>deg F (°F)</b> Degrees Farenheit  <b>g</b> Grams  <b>g/cm<sup>3</sup></b> Grams per Cubic Centimetre  <b>g/l</b> Grams per Litre  <b>HSNO</b> Hazardous Substance and New Organism  <b>IDLH</b> Immediately Dangerous to Life and Health  <b>immiscible</b> Liquids are insoluable in each other.  <b>inHg</b> Inch of Mercury  <b>inH<sub>2</sub>O</b> Inch of Water  <b>K</b> Kelvin  <b>kg</b> Kilogram  <b>kg/m<sup>3</sup></b> Kilograms per Cubic Metre  <b>lb</b> Pound  <b>LC50</b> 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.  <b>LD50</b> 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.  <b>ltr</b> or <b>L</b> Litre  <b>m<sup>3</sup></b> Cubic Metre  <b>mbar</b> Millibar  <b>mg</b> Milligram  <b>mg/24H</b> Milligrams per 24 Hours  <b>mg/kg</b> Milligrams per Kilogram  <b>mg/m<sup>3</sup></b> Milligrams per Cubic Metre  <b>Misc</b> or <b>Miscible</b> Liquids form one homogeneous liquid phase regardless of the amount of either component present.  <b>mm</b> Millimetre  <b>mmH<sub>2</sub>O</b> Millimetres of Water  <b>mPa.s</b> Millipascals per Second  <b>N/A</b> Not Applicable  <b>NIOSH</b> National Institute for Occupational Safety and Health  <b>NOHSC</b> National Occupational Health and Safety Commission  <b>OECD</b> Organisation for Economic Co-operation and Development  <b>Oz</b> Ounce  <b>PEL</b> Permissible Exposure Limit  <b>Pa</b> Pascal  <b>ppb</b> Parts per Billion</p>



**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