

### 1. IDENTIFICATION

<b>Product Name</b>	<b>Phenolic resin</b>
<b>Other Names</b>	PF440WA2
<b>Uses</b>	Phenolic Molding Compound; Adhesive; Encapsulation of electrical and electronic components; Coating; For foundry, laminate, adhesive, coating and molding compound.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	(C6H6O.CH2O) <sub>x</sub>
<b>Chemical Name</b>	Formaldehyde, oligomeric reaction products with phenol
<b>Product Description</b>	No Data Available

### 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)** Schedule 6

### Globally Harmonised System

<b>Hazard Classification</b>	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
<b>Hazard Categories</b>	Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 1 Germ Cell Mutagenicity - Category 2 Acute Hazard To The Aquatic Environment - Category 3 Long-term Hazard To The Aquatic Environment - Category 3

**Pictograms**



**Signal Word** Danger

<b>Hazard Statements</b>	<b>H315</b>	Causes skin irritation.
	<b>H318</b>	Causes serious eye damage.
	<b>H341</b>	Suspected of causing genetic defects.
	<b>H412</b>	Harmful to aquatic life with long lasting effects.

<b>Precautionary Statements</b>	Prevention	<b>P201</b>	Obtain special instructions before use.
		<b>P273</b>	Avoid release to the environment.
		<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
	Response	<b>P305 + P351 + P338 + P310</b>	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.
		<b>P302 + P352</b>	IF ON SKIN: Wash with plenty of soap and water.
		<b>P308 + P313</b>	IF exposed or concerned: Get medical advice/ attention.
		<b>P332 + P313</b>	If skin irritation occurs: Get medical advice/attention.
	Storage	<b>P362</b>	Take off contaminated clothing and wash before reuse.
		<b>P405</b>	Store locked up.
	Disposal	<b>P501</b>	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)

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

*Ingredients*

Chemical Entity	Formula	CAS Number	Proportion
Formaldehyde, oligomeric reaction products with phenol	(C6H6O.CH2O)x	9003-35-4	>95 %
Phenol	C6H6O	108-95-2	<5 %

**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. Do not induce vomiting. Immediately call a Poison Centre or doctor/physician for advice.
<b>Eye</b>	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. Immediately call a Poison Centre or doctor/physician.
<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.
<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. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult.
<b>Advice to Doctor</b>	If exposed or concerned, get medical advice/attention. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
<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.
<b>Flammability Conditions</b>	May burn but does not ignite readily. - Ignition temperature: 580 °C
<b>Extinguishing Media</b>	Use dry chemical, Carbon dioxide (CO <sub>2</sub> ), alcohol-resistant foam or water spray for extinction. Use fire extinguishing methods suitable to surrounding conditions.
<b>Fire and Explosion Hazard</b>	Fine dust/powdered material may form explosive mixtures with air. Do not inhale explosion gases or combustion gases.
<b>Hazardous Products of Combustion</b>	Fire may produce irritating and/or toxic fumes, including Carbon monoxide (CO), Formaldehyde, Phenol; Under certain fire conditions, traces of other toxic gases cannot be excluded.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control water - Runoff may pollute waterways.
<b>Personal Protective Equipment</b>	Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit).
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

## **6. ACCIDENTAL RELEASE MEASURES**

<b>General Response Procedure</b>	Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Collect material (pick up mechanically) and place it into suitable, properly labelled containers for disposal (see SECTION 13).
<b>Containment</b>	Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
<b>Decontamination</b>	No information available.
<b>Environmental Precautionary Measures</b>	Prevent entry into drains and waterways.
<b>Evacuation Criteria</b>	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
<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. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8). Dust explosion hazard: Keep away from heat and sources of ignition - No smoking. Take precautionary measures against static discharge.
<b>Storage</b>	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Keep away from heat and sources of ignition - No smoking. Keep away from foodstuffs, beverages and feed. Keep away from incompatible materials (see SECTION 10).
<b>Container</b>	Keep in the original container.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>General</b>	No specific exposure standards are available for this product. For COMPONENT: Phenol (CAS No. 108-95-2): - Safe Work Australia Exposure Standard: TWA = 1 ppm (4 mg/m <sup>3</sup> ); Absorption through the skin may be a significant source of exposure (Sk). - New Zealand WES: TWA = 5 ppm; Skin absorption (skin).
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	COMPONENT: Phenol (CAS No. 108-95-2): - BEI (USA): 250 mg/g creatinine - Medium: Urine (end of shift) - Parameter: Phenol with hydrolysis (background, nonspecific).
<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.
<b>Personal Protection Equipment</b>	- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or if dust is generated during handling and/or processing. Recommended: In case of brief exposure or low pollution, use respiratory filter device (Short-term filter device: A/P2). In case of intensive or longer exposure use self-contained respiratory protective device. - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Safety glasses with side shields. - Hand protection: Wear protective gloves. Recommended: Protective gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Protective work clothing. The type of protective equipment must be selected according to the concentration and amount of the hazardous substance(s) at the specific workplace.
<b>Special Hazards Precautions</b>	No information available.
<b>Work Hygienic Practices</b>	Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of work. Immediately remove all soiled and contaminated clothing and wash before reuse.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Solid
<b>Appearance</b>	Granulate
<b>Odour</b>	Phenol-like
<b>Colour</b>	Yellowish - brownish
<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>	No Data Available
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Insoluble in water - Soluble in alcohol, ketone
<b>Specific Gravity</b>	No Data Available

<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	No Data Available
<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>	700 °C
<b>Density</b>	1.1 - 1.2 g/cm <sup>3</sup>
<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>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	Softening point: 80 - 110 °C
<b>Potential for Dust Explosion</b>	Fine dust/powdered material may form explosive mixtures with air.
<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 burn but does not ignite readily.
<b>Reactions That Release Gases or Vapours</b>	Fire may produce irritating and/or toxic fumes, including Carbon monoxide (CO), Formaldehyde, Phenol; Under certain fire conditions, traces of other toxic gases cannot be excluded. Decomposition products depend upon temperature, air supply and the presence of other materials.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	When properly handled and stored, no dangerous reaction is known.
<b>Chemical Stability</b>	This product is stable under prescribed use and storage.
<b>Conditions to Avoid</b>	Keep away from heat and sources of ignition.
<b>Materials to Avoid</b>	Incompatible/reactive with Strong oxidizing agents, strong acids, strong bases.
<b>Hazardous Decomposition Products</b>	No decomposition if used according to specifications. Fire may produce irritating and/or toxic fumes, including Carbon monoxide (CO), Formaldehyde, Phenol; Under certain fire conditions, traces of other toxic gases cannot be excluded. Decomposition products depend upon temperature, air supply and the presence of other materials.
<b>Hazardous Polymerisation</b>	No information available.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	<ul style="list-style-type: none"> <li>- Acute toxicity: No information available for the product itself. May be harmful if swallowed, in contact with skin and if inhaled.</li> <li>- Skin corrosion/irritation: Causes skin irritation; Irritant to skin and mucous membranes.</li> </ul>
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- Eye damage/irritation: Causes serious eye damage; Strong irritant with the danger of severe eye injury.
- Respiratory/skin sensitisation: Not classified based on available data. No sensitising effects known.
- Germ cell mutagenicity: Suspected of causing genetic defects (Component: Phenol).
- Carcinogenicity: Not classified based on available data.
- Reproductive toxicity: Not classified based on available data.
- STOT (single exposure): Not classified based on available data. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose, and throat.
- STOT (repeated exposure): Not classified based on available data.
- Aspiration toxicity: Not classified based on available data.

#### **Acute**

##### **Ingestion**

Acute toxicity (Oral):  
No information available for the product itself. For COMPONENT: Phenol (CAS No. 108-95-2):  
- LD50, Rat: 650 mg/kg [OECD 401].

##### **Other**

Acute toxicity (Dermal):  
No information available for the product itself. For COMPONENT: Phenol (CAS No. 108-95-2):  
- LD50, Rabbit: 660 mg/kg [OECD 402].

##### **Inhalation**

Acute toxicity (Inhalation):  
No information available for the product itself. For COMPONENT: Phenol (CAS No. 108-95-2):  
- LC50, Rat: 0.9 mg/l (4 h) [OECD 403].

##### **Carcinogen Category**

None

## 12. ECOLOGICAL INFORMATION

##### **Ecotoxicity**

Aquatic toxicity:  
No information available for the product itself. For COMPONENT: Phenol (CAS No. 108-95-2):  
- LC50, Fish: 24.9 mg/l (96 h) [US EPA].  
- NOEC, Fish: 0.077 mg/l (60 d) [OECD 204].  
- EC50, Daphnia: 3.1 mg/l (48 h) [US EPA 600/4-89/001A].  
- EC10, Daphnia: 0.46 mg/l (16 d) [NEN-ISO 6502].  
- EC50, Algae: 61.1 mg/l (96 h).  
- IC50, Microorganisms (static): 21 mg/l (24 h) [EPA/600/4-89/001].

##### **Persistence/Degradability**

No information available for the product itself. For COMPONENT: Phenol (CAS No. 108-95-2):  
- Under anaerobic conditions phenol will be biodegraded.  
- Easily biodegradable (62 %, 100 hr) [OECD 301C].

##### **Mobility**

No information available for the product itself. For COMPONENT: Phenol (CAS No. 108-95-2):  
- Partition coefficient, soil organic carbon/water (Koc) : 82.8 L/Kg  
- Potential for mobility in soil is high (Koc between 50 and 150).

##### **Environmental Fate**

Harmful to aquatic life with long lasting effects - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

##### **Bioaccumulation Potential**

No information available for the product itself. For COMPONENT: Phenol (CAS No. 108-95-2):  
- Bioconcentration Factor (BCF): 17.5 [OECD 305E].  
- Log Kow: 1.47  
- Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

##### **Environmental Impact**

No Data Available

## 13. DISPOSAL CONSIDERATIONS

##### **General Information**

Dispose of contents/container in accordance with local/regional/national regulations; Must not be disposed together with household garbage.

##### **Special Precautions for Land Fill**

Contaminated packaging: Packaging may be reused or recycled after cleaning.

## 14. TRANSPORT INFORMATION

**Land Transport (Australia)**

ADG Code

<b>Proper Shipping Name</b>	PHENOLIC RESIN
<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>	PHENOLIC RESIN
<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>	PHENOLIC RESIN
<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>	PHENOLIC RESIN
<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>	PHENOLIC RESIN
<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>	PHENOLIC RESIN
<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>	Schedule 6

#### National/Regional Inventories

<b>Australia (AICS)</b>	Listed
<b>Canada (DSL)</b>	Not Determined
<b>Canada (NDSL)</b>	Not Determined
<b>China (IECSC)</b>	Not Determined
<b>Europe (EINECS)</b>	Not Determined
<b>Europe (REACH)</b>	Not Determined
<b>Japan (ENCS/METI)</b>	Not Determined
<b>Korea (KECI)</b>	Not Determined
<b>Malaysia (EHS Register)</b>	Not Determined
<b>New Zealand (NZIoC)</b>	Not Determined
<b>Philippines (PICCS)</b>	Not Determined
<b>Switzerland (Giftliste 1)</b>	Not Determined



<b>Switzerland (Inventory of Notified Substances)</b>	Not Determined
<b>Taiwan (NCSR)</b>	Not Determined
<b>USA (TSCA)</b>	Not Determined

## 16. OTHER INFORMATION

<b>Related Product Codes</b>	PHERES4400, PHERES4450
<b>Revision</b>	1
<b>Revision Date</b>	23 Jul 2018
<b>Key/Legend</b>	<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  <b>ppm</b> Parts per Million  <b>ppm/2h</b> Parts per Million per 2 Hours  <b>ppm/6h</b> Parts per Million per 6 Hours  <b>psi</b> Pounds per Square Inch  <b>R</b> Rankine  <b>RCP</b> Reciprocal Calculation Procedure  <b>STEL</b> Short Term Exposure Limit  <b>TLV</b> Threshold Limit Value  <b>tne</b> Tonne</p>

**TWA** Time Weighted Average  
**ug/24H** Micrograms per 24 Hours  
**UN** United Nations  
**wt** Weight